ATTACHMENT “A”

CHAPTER 12

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GENERAL INFORMATION

(a) AUTHORITY AND TITLE

This Ordinance is required by Phase II of the National Pollutant Discharge Elimination System program (FR Doc. 99–29181) authorized by the 1972 amendments to the Clean Water Act, the Indiana Department of Environmental Management's Rule 13 (327 IAC 15-13), and the Indiana Department of Environmental Management's Rule 5 (327 IAC 15-5). Based on this authority and these requirements, this Ordinance regulates:

1. Discharges of prohibited non-stormwater flows into the storm drain system.
2. Stormwater drainage improvements related to development of lands located within the corporate boundaries of the Town of Zionsville ("Town").
3. Drainage control systems installed during new construction and grading of lots and other parcels of land.
4. Erosion and sediment control systems installed during new construction and grading of lots and other parcels of land.
5. The design, construction, and maintenance of stormwater drainage facilities and systems.
6. The design, construction, and maintenance of stormwater quality facilities and systems.

This Ordinance shall be known and may be cited as the Town of Zionsville Stormwater Management Ordinance.

(b) APPLICABILITY AND EXEMPTIONS

This Ordinance shall regulate all development and redevelopment occurring within the Town of Zionsville. No building permit shall be issued and no land disturbance started for any construction in a development, as defined in Appendix A, until the plans required by this Ordinance for such construction have been accepted in writing by the Town of Zionsville. With the exception of the requirements of Section 12-2 and Section 12-6(d) of this Ordinance, single-family dwelling houses in accepted subdivisions, new buildings (or building additions) with less than 500 square feet of area, and land-disturbing activities affecting less than 10,000 square feet of area shall be exempt from the requirements of this Ordinance. Also exempt from this Ordinance shall be agricultural land-disturbing activities.

Zionsville Town Municipal Projects shall be exempt from obtaining a permit, but are expected to meet all applicable technical requirements of this Ordinance and the Town of Zionsville Stormwater Technical Standards Manual.

Any construction project which has had its final drainage plan accepted by the Town of Zionsville within a 2-year period prior to the effective date of this Ordinance shall be exempt from all requirements of this Ordinance that are in excess of the requirements of ordinances in effect at the time of acceptance. Such an exemption is not applicable to the requirements detailed in Section 12-2 of this Ordinance.

The Town of Zionsville has the authority to modify, grant exemptions, and/or waive any and all the requirements of this Ordinance and its associated technical standards document. A pre-submittal meeting with the Town may be requested by the applicant to discuss the applicability of various provisions of the Ordinance and its associated technical standards document with regards to unique or unusual circumstances relating to a project. However, any initial determination of such applicability shall not be binding on future determinations of the Town that may be based on the review of more detailed information and plans.

(c) BACKGROUND

The Town Council of the Town of Zionsville, State of Indiana, on November 6, 2000 adopted Ordinance No. 2000-21 which established "The Town of Zionsville Subdivision Control Ordinance", commonly known as the "Subdivision Control Ordinance", in order to control runoff of stormwater and to protect, conserve and promote the orderly development of the land in the Town of Zionsville and its water resources. This code was primarily targeted at the overall administration of policies regarding the development and redevelopment of land within the Town of Zionsville. On October 4, 2004, the Town Council of the Town of Zionsville adopted amendments to the “Design and Construction Standards” of the Town of Zionsville to govern specific technical issues in regard to new developments and redevelopments. The Town relied upon the Boone County Soil and Water Conservation District, engineering review and developer submittals to determine compliance with applicable laws of the State of Indiana in regard to erosion control and pre- and post- development drainage plans.

On December 8, 1999, Phase II of the National Pollutant Discharge Elimination System (NPDES) permit program was published in the Federal Register. The NPDES program, as authorized by the 1972 amendments to the Clean Water Act, controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Phase II of NPDES requires permit coverage for stormwater discharges from regulated small municipal separate storm sewer systems (MS4s) and for small construction activity that results in the disturbance of equal to or greater than one acre. This federal regulation went into affect March 10, 2003. In response to Phase II of NPDES, the Indiana Department of Environmental Management enacted Rule 13 (327 IAC 15-13) and revised Rule 5 (327 IAC 15-5).

Under these new State and Federal regulations, the Town of Zionsville is required to establish a regulatory mechanism for regulating stormwater quality management. Therefore, this document was created to supplement the “Town of Zionsville Subdivision Control Ordinance” and the “Design and Construction Standards” to address stormwater quality and quantity.

(d) FINDINGS

The Town of Zionsville finds that:

1. Water bodies, roadways, structures, and other property within, and downstream of the Town of Zionsville are at times subjected to flooding;
2. Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of the region;
3. Land development alters the hydrologic response of watersheds, resulting in increased stormwater runoff rates and volumes, increased flooding, increased stream channel erosion, and increased sediment transport and deposition;
4. Soil erosion resulting from land-disturbing activities causes a significant amount of sediment and other pollutants to be transported off-site and deposited in ditches, streams, wetlands, lakes, and reservoirs;
5. Increased stormwater runoff rates and volumes, and the sediments and pollutants associated with stormwater runoff from future development projects within the Town will, absent reasonable regulation and control, adversely affect the Town's water bodies and water resources;
6. Pollutant contributions from illicit discharges within the Town will, absent reasonable regulation, monitoring, and enforcement, adversely affect the Town’s water bodies and water resources;
7. Stormwater runoff, soil erosion, non-point source pollution, and illicit sources of pollution can be controlled and minimized by the regulation of stormwater management;
8. Adopting the standards, criteria, and procedures contained and referenced in this Ordinance and implementing the same will address many of the deleterious effects of stormwater runoff and illicit discharges;

9. Adopting this Ordinance is necessary for the preservation of the public health, safety, and welfare, for the conservation of natural resources, and for compliance with State and Federal regulations.

(e) PURPOSE

The purpose of this Ordinance is to provide for the health, safety, and general welfare of the citizens of the Town of Zionsville through the regulation of stormwater and non-stormwater discharges to the storm drainage system and to protect, conserve and promote the orderly development of land and water resources within the Town. This Ordinance establishes methods for managing the quantity and quality of stormwater entering into the storm drain system in order to comply with State and Federal requirements. The objectives of this Ordinance are:

1. To reduce the hazard to public health and safety caused by excessive stormwater runoff.
2. To regulate the contribution of pollutants to the storm drain system from construction site runoff.
3. To regulate the contribution of pollutants to the storm drain system from runoff from new development and re-development.
4. To prohibit illicit discharges into the storm drain system.
5. To establish legal authority to carry out all inspection, monitoring, and enforcement procedures necessary to ensure compliance with this ordinance.

(f) ABBREVIATIONS AND DEFINITIONS

For the purpose of this Ordinance, the abbreviations and definitions provided in Appendix A shall apply.

(g) RESPONSIBILITY FOR ADMINISTRATION

The Town of Zionsville shall administer, implement, and enforce the provisions of this Ordinance. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the Town to qualified persons or entities acting in the beneficial interest of or in the employ of the Town.

(h) INTERPRETATION

Words and phrases in this Ordinance shall be construed according to their common and accepted meanings, except that words and phrases defined in Appendix A, shall be construed according to the respective definitions given in that section. Technical words and technical phrases that are not defined in this Ordinance but which have acquired particular meanings in law or in technical usage shall be construed according to such meanings.

(i) DISCLAIMER OF LIABILITY

The degree of protection required by this Ordinance is considered reasonable for regulatory purposes and is based on historical records, engineering, and scientific methods of study. Larger storms may occur or stormwater runoff amounts may be increased by man-made or natural causes. This Ordinance does not imply that land uses permitted will be free from stormwater damage. This Ordinance shall not create liability on the part of the Town of Zionsville or any officer, representative, or employee thereof, for any damage that may result from reliance on this Ordinance or on any administrative decision lawfully made there under.

SECTION 12-2

PROHIBITED DISCHARGES AND CONNECTIONS

(a) APPLICABILITY AND EXEMPTIONS

This section shall apply to all discharges, including illegal dumping, entering the storm drain system under the control of the Town of Zionsville, regardless of whether the discharge originates from developed or undeveloped lands, and regardless of whether the discharge is generated from an active construction site or a stabilized site. These discharges include flows from direct connections to the storm drain system, illegal dumping, and contaminated runoff.

Stormwater runoff from agricultural, timber harvesting, and mining activities is exempted from the requirements of this section unless determined to contain pollutants not associated with such activities or in excess of standard practices. Farm residences are ***not*** included in this exemption.

Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for the subject discharge to the storm drain system, is also exempted from this section.

(b) PROHIBITED DISCHARGES AND CONNECTIONS

No person shall discharge to a MS4 conveyance, watercourse, or waterbody, directly or indirectly, any substance other than stormwater or an exempted discharge. Any person discharging stormwater shall effectively minimize pollutants from also being discharged with the stormwater, through the use of best management practices (BMP's).

The Town of Zionsville is authorized to require dischargers to implement pollution prevention measures, utilizing BMP's necessary to prevent or reduce the discharge of pollutants into the Town's stormwater drainage system.

(c) EXEMPTED DISCHARGES AND CONNECTIONS

Notwithstanding other requirements in this Ordinance, the following categories of non-stormwater discharges or flows are exempted from the requirements of this section:

1. Water line flushing;
2. Landscape irrigation;
3. Diverted streamflows;
4. Rising ground waters;
5. Uncontaminated groundwater infiltration;
6. Uncontaminated pumped ground water;
7. Discharges from potable water sources;
8. Foundation drains;
9. Air conditioning condensation;
10. Irrigation water;
11. Springs;
12. Water from crawl space pumps;
13. Footing drains;
14. Lawn watering;

15. Individual residential car washing;
16. Flows from riparian habitats and wetlands;
17. Dechlorinated swimming pool discharges;
18. Street wash water;
19. Discharges from firefighting activities;
20. Naturally introduced detritus (e.g. leaves and twigs).

(d) STORAGE OF HAZARDOUS OR TOXIC MATERIAL

Storage or stockpiling of hazardous or toxic material within any watercourse, or in its associated floodway or floodplain, is strictly prohibited. Storage or stockpiling of hazardous or toxic material, including sewage treatment plant stockpiles, on active construction sites must include adequate protection and/or containment so as to prevent any such materials from entering any temporary or permanent stormwater conveyance or watercourse.

(e) PRIVATE PROPERTY MAINTENANCE DUTIES

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse located within their property boundaries, free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

(f) SPILL REPORTING

Any discharger who accidentally discharges into a waterbody any substance other than stormwater or an exempted discharge shall immediately inform the Town of Zionsville concerning the discharge. A written report concerning the discharge shall be filed with the Town and IDEM, by the dischargers, within five (5) days. The written report shall specify:

1. The composition of the discharge and the cause thereof;
2. The date, time, and estimated volume of the discharge;
3. All measures taken to clean up the accidental discharge, and all measures proposed to be taken to prevent any recurrence;
4. The name and telephone number of the person making the report, and the name and telephone number of a person who may be contacted for additional information on the matter.

A properly reported accidental discharge shall be an affirmative defense to a civil infraction proceeding brought under this Ordinance against a discharger for such discharge. It shall not, however, be a defense to a legal action brought to obtain an injunction, to obtain recovery of costs or to obtain other relief because of or arising out of the discharge. A discharge shall be considered properly reported only if the discharger complies with all the requirements of this section. This requirement does not relieve discharger from notifying other entities as required by state or federal regulations.

(g) INSPECTIONS AND MONITORING

1. Storm Drainage System

The Town of Zionsville has the authority to periodically inspect the portion of the storm drainage system under the Town's control, in an effort to detect and eliminate illicit connections and discharges into the system. This inspection will include a screening of discharges from outfalls

connected to the system in order to determine if prohibited flows are being conveyed into the storm drainage system. It could also include spot testing of waters contained in the storm drainage system itself to detect the introduction of pollutants into the system by means other than a defined outfall, such as dumping or contaminated sheet runoff.

2. Potential Polluters

If, as a result of the storm drainage system inspection, a discharger is suspected of an illicit discharge, the Town may inspect and/or obtain stormwater samples from stormwater runoff facilities of the subject discharger, to determine compliance with the requirements of this Ordinance. Upon request, the discharger shall allow the Town's properly identified representative to enter upon the premises of the discharger at all hours necessary for the purposes of such inspection or sampling. The Town or its properly identified representative may place on the discharger's property the equipment or devices used for such sampling or inspection. Identified illicit connections or discharges shall be subject to enforcement action as described in Section 12-7 of this Ordinance.

3. New Development and Re-Development

Following the final completion of construction and the receipt of as-built drawings by the Town, the Town has the authority to inspect new development and re-development sites to verify that all on-site stormwater conveyances and connections to the storm drainage system are in compliance with this section.

SECTION 12-3

STORMWATER QUANTITY MANAGEMENT

(a) APPLICABILITY AND EXEMPTIONS

The storage and controlled release rate of excess stormwater runoff shall be required for all new business, commercial and industrial developments, residential subdivisions, planned development, rural estate subdivisions, and any redevelopment or other new construction located within the Town of Zionsville. The Town, after thorough investigation and evaluation, may waive the requirement of controlled runoff for minor subdivisions and parcelization. Additional exemptions regarding the detention requirements are provided under Section 2.A.v (below).

(b) POLICY ON STORMWATER QUANTITY MANAGEMENT

1. Detention Policy

It is recognized that most streams and drainage channels serving the Town do not have sufficient capacity to receive and convey stormwater runoff resulting from continued urbanization. Accordingly, except for situations provided in Sections iii and iv (below), the storage and controlled release of excess stormwater runoff shall be required for all developments and redevelopments (as defined in Appendix A) located within the Town.

i. General Release Rates

In general, the post-development release rates for developments up to and including the 10-year return period storm may not exceed 0.3 cfs per acre of development. The post-development release rate for developments for the 11 - 100-year return period storms shall not exceed 0.5 cfs per acre of development. For sites where the pre-developed area has more than one (1) outlet, the release rate should be computed based on pre-developed discharge to each outlet point. The computed release rate for each outlet point shall not be exceeded at the respective outlet point even if the post developed conditions would involve a different arrangement of outlet points.

ii. Site-Specific Release Rates for Sites with Depressional Storage

For sites where depressional storage exists, the general release rates provided above may have to be further reduced. If depressional storage exists at the site, site-specific release rates must be calculated according to methodology described in the Town of Zionsville Stormwater Technical Standards Manual, accounting for the depressional storage by modeling it as a pond whose outlet is a weir at an elevation that stormwater can currently overflow the depressional storage area. Post-developed release rate for sites with depressional storage shall be the 2-year pre-developed peak runoff rate for the post-developed 10-year storm and 10-year pre-developed peak runoff rate for the post-developed 100-year storm. In no case shall the calculated site-specific release rates be larger than the general release rates provided above.

Also note that for determining the post-developed peak runoff rate, the depressional storage must be assumed to be filled unless the Town can be assured, through dedicated easement, that the noted storage will be preserved in perpetuity.

iii. Management of Off-site Runoff

Runoff from all upstream tributary areas (off-site land areas) may be bypassed around the detention/retention facility without attenuation. Such runoff may also be bypassed through the detention/retention facility without attenuation, provided that a separate outlet system or channel is incorporated for the safe passage of such flows, i.e., not through the

primary outlet of a detention facility. Unless the pond is being designed as a regional detention facility, the primary outlet structure shall be sized and the invert elevation of the emergency overflow weir determined according to the on-site runoff only. Once the size and location of primary outlet structure and the invert elevation of the emergency overflow weir are determined by considering on-site runoff, the 100-year pond elevation is determined by routing the entire inflow, on-site and off-site, through the pond.

Note that the efficiency of the detention/retention facility in controlling the on-site runoff may be severely affected if the off-site area is considerably larger than the on-site area. As a general guidance, on-line detention may not be effective in controlling on-site runoff where the ratio of off-site area to on-site area is larger than 5:1. Additional detention (above and beyond that required for on-site area) may be required by the Town when the ratio of off-site area to on-site area is larger than 5:1.

iv. Downstream Restrictions

In the event the downstream receiving channel or storm sewer system is inadequate to accommodate the post-developed release rate provided above, then the allowable release rate shall be reduced to that rate permitted by the capacity of the receiving downstream channel or storm sewer system. Additional detention, as determined by the Town, shall be required to store that portion of the runoff exceeding the capacity of the receiving sewers or watercourses. When such downstream restrictions are suspected, the Town may require additional analysis to determine the receiving system's limiting downstream capacity.

If the proposed development makes up only a portion of the undeveloped watershed upstream of the limiting restriction, the allowable release rate for the development shall be in direct proportion to the ratio of its drainage area to the drainage area of the entire watershed upstream of the restriction.

v. Exemptions for Detention Requirements

Detention will not be required for the following:

a. Notwithstanding the requirements for an Individual Lot Plot Plan Permit in this Ordinance, land alterations where the primary basis on which a stormwater drainage permit is required is the construction, enlargement, or location (on a permanent foundation) of a one-family dwelling, two-family dwelling, or accessory structure appurtenant to either a one- or two-family dwelling.

b. Accepted fill areas or one-time addition to existing commercial buildings that do not increase the amount of impervious area on-site by more than a total of 0.5 acres, provided the existing runoff patterns and flow capacity of the property will not be altered by the filling operations.

c. Notwithstanding the provisions of Section iv (above), those site developments where the stormwater management system has been designed such that:

   (i) after combining flows from both the off-site and on-site drainage areas, there will be no increase in the total peak discharge from the developing site during the 2-, 10-, or 100-year storm events; and

   (ii) the volume of runoff for each project site outlet has not been increased for the 2-, 10-, or 100-year storm events; and

   (iii) the flow width and velocity at the property boundary line for each sub-basin is less than or equal to that flow width and velocity which existed prior to the development for the 2-, 10-, or 100-year storm events.

d. Where the direct release of runoff from the proposed development meets the conditions set forth in Section vi (below).

vi. Direct Release Provisions

It is the policy of the Town to allow the direct release (no detention) of runoff from a proposed development to an adjacent stream with more than 100 square miles of contributing drainage area at the direct release point. Therefore, direct release may be allowed for parcels adjacent to the following stream reaches in the Town of Zionsville Corporate Boundaries:

1. Eagle Creek downstream of Little Eagle Creek Confluence.

Due to unknowns regarding the future development patterns and the associated proposed stormwater management systems within a watershed, it is the policy of the Town to discourage direct release to a stream with less than 100 square miles of contributing drainage area at the direct release point. However, in rare circumstances, where a comprehensive watershed-wide hydrologic study or watershed plan of a major stream adopted by the Town substantiates the benefits of (or allows for) direct release for a proposed development located adjacent to a major stream, the detention requirements set in Section i (above) may be waived.

In substantiating the potential benefits of direct release, the watershed-wide hydrologic study provided by the applicant must demonstrate that the peak discharge associated with 2-year, 10-year, and 100-year precipitation events would not increase along the receiving stream. At a minimum, the stream reach to be examined needs to extend from the direct release point to a point downstream with a drainage area at least ten (10) times the drainage area of the proposed development and its off-site contributing drainage area. The required analyses must be done both for the existing land use and future potential land use (developed conditions) in the watersheds involved.

To be applicable to the development site, the sub-basin sizes for the watershed-wide hydrologic analyses of the major stream (including the sub-basin area containing the proposed development and its off-site contributing areas) must be generally uniform (between 0.5 and 2.0 times the average sub-basin size). Furthermore, the maximum size of the sub-basin area containing the proposed development and its off-site contributing areas should not exceed 5.0 times the area of the proposed development.

2. Grading and Building Pad Elevations

Maximum yard slopes are 3:1 where soil has been disturbed during construction processes. Finished floor elevation must be no less than 6 inches above finished grade and a minimum of 15 inches above an adjacent road elevation unless a written variance is granted by the Town.

For all structures located in the Special Flood Hazards Area (SFHA) as shown on the FEMA maps, the lowest floor elevations of all residential, commercial, or industrial buildings, shall be such that Lowest Floor elevation, including basement, shall be at the flood protection grade and therefore have 2 feet of freeboard above the 100-year flood elevation.

The Lowest Adjacent Grade for residential, commercial, or industrial buildings outside a FEMA or IDNR designated floodplain shall have two feet of freeboard above the flooding source's 100-year flood elevation under proposed conditions, unless the flooding source is a rear-yard swale. When the flooding source is a rear-yard swale, the Lowest Adjacent Grade for residential, commercial, or industrial buildings shall have 2 feet of freeboard above the 100-year flood elevation under proposed conditions.

For areas outside a FEMA or IDNR designated floodplain, the Lowest Adjacent Grade (including walkout basement floor elevation) for all residential, commercial, or industrial buildings adjacent to ponds shall be set a minimum of 2 feet above the 100-year pond elevation or 2 feet above the emergency overflow weir elevation, whichever is higher. In addition to the Lowest Adjacent Grade requirements, any basement floor must be at least a foot above the permanent water level (normal pool elevation).

The 100-year flow paths throughout the development, whether shown on FEMA maps or not, must be delineated as hatched area on the plans and 30 feet flow width along the centerline of the flow path (15 feet from center on each side) designated as permanent drainage easements. A statement shall be added to the plat that would refer the viewer to the construction plans to see the entire extent of overflow path as hatched areas. No fences or landscaping can be constructed within the easement areas that may impede the free flow of stormwater. These areas are easements that are to be maintained by the property owners or be designated as common areas that are to be maintained by the homeowners' association. The Lowest Adjacent Grade for all residential, commercial, or industrial buildings shall be set a minimum of 1 foot above the noted overflow path/ponding elevation.

It shall be the property owners' responsibility to maintain the natural features on their lots and to take preventive measures against any and all erosion and/or deterioration of natural or manmade features on their lots.

3. Acceptable Outlet and Adjoining Property Impacts Policies

Design and construction of the stormwater facility shall provide for the discharge of the stormwater runoff from off-site land areas as well as the stormwater from the area being developed (on-site land areas) to an acceptable outlet(s) (as determined by the Town) having capacity to receive upstream (off-site) and on-site drainage. The flow path from the development outfall(s) to a regulated drain or natural watercourse (as determined by the Town) shall be provided on an exhibit that includes topographic information. Any existing field tile encountered during the construction shall also be incorporated into the proposed stormwater drainage system or tied to an acceptable outlet.

Where the outfall from the stormwater drainage system of any development flows through real estate owned by others prior to reaching a regulated drain or watercourse, no approval shall be granted for such drainage system until all owners of real estate and/or tenants crossed by the outfall either consent in writing to the use of their real estate or are notified of a hearing relevant to the proposed use. Notification of the time and place of the hearing shall be made in person or by certified mail at least ten (10) days prior to the hearing. Proof of notice to each landowner shall be filed by affidavit with the Town prior to the hearing. In addition, no activities conducted as part of the development shall be allowed to obstruct the free flow of floodwaters from an upstream property.

If an adequate outlet is not located on site, then off-site drainage improvements may be required. Those improvements may include, but are not limited to, extending storm sewers, clearing, dredging and/or removal of obstructions to open drains or natural water courses, and the removal or replacement of undersized culvert pipes as required by the Town.

4. No Net Loss Floodplain Storage Policy

Floodplains exist adjacent to all natural and man-made streams, regardless of contributing drainage area or whether they have been previously identified or mapped. Due to potential impacts of floodplain loss on peak flows in streams and on the environment, disturbance to floodplains should be avoided. When the avoidance of floodplain disturbance is not practical, the natural functions of the floodplain should be preserved to the extent possible.

In an attempt to strike a balance between the legitimate need for economic development within the Town of Zionsville corporate boundaries and the need to preserve the natural functions of floodplains to the extent possible, compensatory excavation equivalent to the floodplain storage lost shall be required for all activities within floodplain of streams located in the Town where drainage area of the stream is equal to or larger than one square mile. The Town may alter the compensation ratio, based on extenuating circumstances, for a specific project.

Note that by definition, compensatory storage is the replacement of the existing floodplain and, in rare exceptions, the floodway storage lost due to fill. Compensatory storage is required when a portion of the floodplain is filled, occupied by a structure, or when as a result of a project a change in the channel hydraulics occurs that reduces the existing available floodplain storage. The compensatory storage should be located adjacent to or opposite the placement of the fill and maintain an unimpeded connection to an adjoining floodplain area.

Computations must show no net loss of floodplain storage for 2-year, 10-year, 50-year, and 100-year storm events. That is, the post-development 2-year floodplain storage along a stream shall be the same as 2-year pre-development floodplain storage along the stream within the property limits, the post-development 10-year floodplain storage along a stream shall be the same as 10-year pre-development floodplain storage along the stream within the property limits, and so on.

Calculations for floodplain volume shall be submitted in tabular form showing calculations by cross-section. The volume of floodplain storage under the without-project conditions and the with-project conditions should be determined using the average-end-area method with plotted cross-sections at a horizontal to vertical ratio of between 5:1 and 10:1, with 2- through 100-year flood elevations noted on each cross section. The scale chosen should be large enough to show the intent of proposed grading. Cross-sections should reflect both the existing and proposed conditions on the same plot. The location and extent of the compensatory storage area as well as the location and orientation of cross-sections should be shown on the grading plan.

(c) CALCULATIONS AND DESIGN STANDARDS AND SPECIFICATIONS

The calculation methods as well as the type, sizing, and placement of all stormwater facilities shall meet the design criteria, standards, and specifications outlined in the Town of Zionsville Stormwater Technical Standards Manual. The methods and procedures in the Stormwater Technical Standards Manual are consistent with the policy stated above.

(d) DRAINAGE EASEMENT REQUIREMENTS

There shall be no trees or shrubs planted, nor any structures or fences erected in any drainage easement without written consent granted by the Building Commissioner of the Town of Zionsville. All stormwater systems, including detention or retention basins, conveyance systems, structures and appurtenances, located outside of the right-of-way shall be incorporated into the Town's system. The stormwater management permit shall not be approved until a petition is submitted in a form accepted by the Town.

The following specific areas shall be included in a petition:

1. **Subdivisions**
   i. All new channels, drain tiles equal to or greater than 12 inches in diameter, 6-inch or larger subsurface drains in rear yard swales and under curbs where no street trees are allowed, inlet and outlet structures of detention and retention ponds, and appurtenances thereto as required by this section, that are installed in subdivisions requiring a stormwater management permit from the Town shall become incorporated into the Town's system upon completion, proper

inspection, and acceptance by the Town. New drain tiles refer to all sub-surface stormwater piping, tubing, tiles, manholes, inlets, catch basins, risers, etc.

ii. New drain tile, 12-inch or greater in diameter, shall be placed in a minimum 30-foot (15 feet from centerline on each side) drainage easement (DE) or drainage and utility easement (D&UE) and shall be designated on the record plat as 30-foot Drainage Easement or Drainage and Utility Easement.

iii. A minimum of 25 feet from top of the bank on each side of a new channel shall be designated on the record plat as a Drainage Easement.

iv. Rear-yard swales and emergency overflow paths associated with detention ponds shall be included as part of the stormwater system of the Town, and a minimum of 30 feet width (15 feet from centerline on each side) needs to be designated as drainage easement.

v. A minimum of 30 feet beyond the actual footprint (top of the bank) of stormwater detention facilities shall be designated as drainage easement. A minimum 30-foot width easement shall also be required as access easement, unless the pond is immediately next to a public right-of-way.

vi. The statutory 75-foot (each side) drainage easement for regulated drains already within the Boone County's system may be reduced if the drain is re-classified by the County Surveyor as an Urban Drain.

vii. An annual maintenance assessment by the Town shall not be required until such time as the Town of Zionsville creates a Storm Water Board or other regulating body under applicable state statute(s) which is empowered to establish and impose a maintenance or other fee assessment, and said fee structure is duly adopted by the Town Council.

viii. The following statement shall become part of the Restrictive Covenants of every platted subdivision and shown on recorded plat: "*channels, tile drains 12-inch or larger,* 6-inch or larger subsurface drains in rear yard swales and under curbs where no street trees are allowed, *inlets and outlets of detention and retention ponds, and appurtenances thereto within designated drain easements are extensions of the Town's stormwater drainage system and are the responsibility of the Town. Drainage swales shall be the responsibility of owner or homeowner association."*

ix. If it is determined that all or a portion of the drainage system within any development involves any existing County Regulated Drain or should be incorporated into the County Legal Drain system the following statement shall be put on each subdivision plat: "*A petition addressed to the Boone County Drainage Board has been filed in duplicate with the County Surveyor, requesting that the subdivision's storm drainage system and its easements be accepted into the County's regulated drainage system. The storm drainage system and its easements that are accepted into the County's regulated drainage system are delineated on the plat as Regulated Drainage Easements (RDEs). These drainage easements are established under authority of the Indiana Drainage Code and the said Board may exercise powers and duties as provided in said code (e.g., annual drainage assessment per lot). All other storm drainage easements have not been accepted into the County's system. All drainage improvements performed relative to the conveyance of Stormwater runoff and the perpetual maintenance thereof, within the latter easements, shall be the responsibility of the owner or homeowner association. The Boone County Drainage Board assumes no responsibility relative to said improvements or the maintenance thereof. This subdivision contains _____ linear feet of open ditches and _____ linear feet of subsurface drains that will be included in the County's Regulated Drainage System*."

x. Any crossing and/or encroachment of a Regulated Drainage Easement requires application and acceptance from the Boone County Surveyor's Office.

2. Non-Subdivisions

Where the Town is responsible for maintenance of the drainage system, regulated drainage easements of 75 feet from the top of bank on each side of the channel or each side of the tile centerline must be dedicated to the Town.

3. Establishment of New Regulated Drain

When Boone County determines it is necessary to establish a new regulated drain, each developer shall provide the necessary information and meet the requirements of the Indiana Drainage Code §36-9-27 for the establishment of a new Regulated Drain. Necessary easements for adequate maintenance of any new Regulated Drain shall be determined by the Boone County Surveyor if not already established by Boone County Ordinance.

(e) PLACEMENT OF UTILITIES

No utility company may disturb existing storm drainage facilities without the consent of the Town staff, whose decision may be appealed to the Town Council of the Town of Zionsville. All existing drainage facilities shall have senior rights and damage to said facilities shall result in penalties as prescribed in Section 12-7 of this ordinance.

(f) STRUCTURES NEAR COUNTY REGULATED DRAINS

For regulated drains not located in platted subdivisions, unless otherwise accepted by the Boone County Drainage Board, no permanent structure (including fences) shall be erected within seventy-five feet measured at right angles from a) the existing top edge of each bank of a regulated open drain, as determined by the Boone County Drainage Board; or b) the center line of a tiled Regulated Drain. The Indiana Drainage Code may be consulted for further details.

(g) INSPECTION, MAINTENANCE, RECORD KEEPING, AND REPORTING

After the approval of the stormwater management permit by the Town and the commencement of construction activities, the Town has the authority to conduct inspections of the work being done to insure full compliance with the provisions of this section, the Stormwater Technical Standards Manual, Design and Construction Standards, and the terms and conditions of the approved permit.

The Town also has the authority to perform long-term, post-construction inspection of all public or privately owned stormwater quantity facilities. The inspection will cover physical conditions, available storage capacity, and the operational condition of key facility elements. Stormwater quantity facilities shall be maintained in good condition, in accordance with the terms and conditions of the approved stormwater management permit, and shall not be subsequently altered, revised or replaced except in accordance with the approved stormwater permit, or in accordance with accepted amendments or revisions to the permit. If deficiencies are found during the inspection, the owner of the facility will be notified by the Town and will be required to take all necessary measures to correct such deficiencies. If the owner fails to correct the deficiencies within the allowed time period, as specified in the notification letter, the Town will undertake the work and collect from the owner using lien rights if necessary.

Assignment of responsibility for maintaining facilities serving more than one lot or holding shall be documented by appropriate covenants to property deeds, unless responsibility is formally accepted by a

public body, and determined before the final stormwater permit is approved. Stormwater detention/retention basins may be donated to the Town or other unit of government designated by the Town, for ownership and permanent maintenance providing the Town or other governmental unit is willing to accept responsibility.

SECTION 12-4

STORMWATER POLLUTION PREVENTION FOR CONSTRUCTION SITES

(a) APPLICABILITY AND EXEMPTIONS

The Town of Zionsville will require a Stormwater Pollution Prevention Plan (SWPPP), which includes erosion and sediment control measures and materials handling procedures, to be submitted as part of a project's construction plans and specifications. Any project located within the corporate boundaries of the Town of Zionsville that includes clearing, grading, excavation or other land disturbing activities resulting in the disturbance of 1 acre or more of total land area, is subject to the requirements of this section. This includes both new development and re-development. This section also applies to disturbances of less than one 1 acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land within the MS4 area. Section 12-3 provides guidelines for calculating land disturbance. Projects meeting the coverage requirements of 327 IAC 15-5 (Rule 5) shall also be in compliance with 327 IAC 15-5.

The requirements under this section do not apply to the following activities:

1. agricultural land disturbing activities; or
2. forest harvesting activities.

The requirements under this section do not apply to the following activities, provided other applicable state permits contain provisions requiring immediate implementation of soil erosion control measures:

1. Landfills that have been issued a certification of closure under 329 IAC 10.
2. Coal mining activities permitted under IC 14-34.
3. Municipal solid waste landfills that are accepting waste pursuant to a permit issued by the Indiana Department of Environmental Management under 329 IAC 10 that contains equivalent stormwater requirements, including the expansion of landfill boundaries and construction of new cells either within or outside the original solid waste permit boundary.

For an individual lot where land disturbance is expected to be one (1) acre or more, the individual lot owner must complete their own notice of intent letter, apply for a stormwater permit from the Town, and ensure that a sufficient construction and stormwater pollution prevention plan is completed and submitted in accordance with Section 12-6 of this Ordinance; regardless of whether the individual lot is part of a larger permitted project site.

An individual lot with land disturbance less than one (1) acre, located within a larger permitted project site, is considered part of the larger permitted project site, and the individual lot operator must comply with the terms and conditions of the stormwater permit approved for the larger project site. The stormwater permit application for the larger project site must include detailed erosion and sediment control measures for individual lots. In addition, these individual lots are required to submit Individual Lot Plot Plan Permit applications prior to receiving a building permit. Details of the permitting process are contained in Section 12-6.

It will be the responsibility of the project site owner to complete a stormwater permit application and ensure that a sufficient construction plan is completed and submitted to the Town in accordance with Section 12-6 of this Ordinance. It will be the responsibility of the project site owner to ensure compliance with this Ordinance during the construction activity and implementation of the construction plan, and to notify the Town with a sufficient notice of termination letter upon completion of the project and stabilization of the site. However, all persons engaging in construction and land disturbing activities on a permitted project site meeting the applicability requirements must comply with the requirements of this section and this Ordinance.

(b) POLICY ON STORMWATER POLLUTION PREVENTION

Effective stormwater pollution prevention on construction sites is dependent on a combination of preventing movement of soil from its original position (erosion control), intercepting displaced soil prior to entering a waterbody (sediment control), and proper on-site materials handling. The developer must submit to the Town, a SWPPP with detailed erosion and sediment control plans as well as a narrative describing materials handling and storage, and construction sequencing. The following principles apply to all land-disturbing activities and should be considered in the preparation of a Stormwater Pollution Prevention Plan within the corporate boundaries of the Town of Zionsville.

1. Minimize the potential for soil erosion by designing a development that fits the topography and soils of the site. Deep cuts and fills in areas with steep slopes should be avoided wherever possible, and natural contours should be followed as closely as possible.

2. Existing natural vegetation should be retained and protected wherever possible. Areas immediately adjacent (within 35 feet of top of bank) to watercourses and lakes also should be left undisturbed wherever possible. Unvegetated or vegetated areas with less than 70% cover that are scheduled or likely to be left inactive for 15 days or more must be temporarily or permanently stabilized with measures appropriate for the season to reduce erosion potential. Alternative measures to site stabilization may be acceptable if the project site owner or their representative can demonstrate they have implemented and maintained erosion and sediment control measures adequate to prevent sediment discharge from the inactive area.

3. All activities on a site should be conducted in a logical sequence so that the smallest practical area of land will be exposed for the shortest practical period of time during development.

4. The length and steepness of designed slopes should be minimized to reduce erosion potential. Drainage channels and swales must be designed and adequately protected so that their final gradients and resultant velocities will not cause erosion in the receiving channel or at the outlet. Methods for determining acceptable velocities are included Stormwater Technical Standards Manual.

5. Sediment-laden water which otherwise would flow from the project site shall be treated by erosion and sediment control measures appropriate to minimize sedimentation. A stable construction site access shall be provided at all points of construction traffic ingress and egress to the project site.

6. Appropriate measures shall be implemented to prevent wastes or unused building materials, including, garbage, debris, packaging material, fuels and petroleum products, hazardous materials or wastes, cleaning wastes, wastewater, concrete truck washout, and other substances from being carried from a project site by runoff or wind. Identification of areas where concrete truck washout is permissible must be clearly posted at appropriate areas of the site. Wastes and unused building materials shall be managed and disposed of in accordance with all applicable State statutes and regulations. Proper storage and handling of materials such as fuels or hazardous wastes, and spill prevention and cleanup measures shall be implemented to minimize the potential for pollutants to contaminate surface or ground water or degrade soil quality.

7. Public or private roadways shall be kept cleared of accumulated sediment that is a result of runoff or tracking. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be redistributed or disposed of in a manner that is in accordance with all applicable statutes and regulations.

8. Collected runoff leaving a project site must be either discharged directly into a well-defined, stable receiving channel, or diffused and released to adjacent property without causing an erosion or pollutant problem to the adjacent property owner.

9. Natural features, including wetlands, shall be protected from pollutants associated with stormwater runoff.

(c) CALCULATIONS AND DESIGN STANDARDS AND SPECIFICATIONS

In calculating the total area of land disturbance, for the purposes of determining applicability of this section to a project, the following guidelines should be used:

1. Off-site construction activities that provide services (for example, road extensions, sewer, water, offsite stockpiles, and other utilities) to a land disturbing project site, must be considered as a part of the total land disturbance calculation for the project site, when the activity is under the control of the project site owner.

2. Strip developments will be considered as one (1) project site and must comply with this section unless the total combined disturbance on all individual lots is less than one (1) acre and is not part of a larger common plan of development or sale.

3. To determine if multi-lot project sites are regulated by this rule, the area of land disturbance shall be calculated by adding the total area of land disturbance for improvements, such as, roads, utilities, or common areas, and the expected total disturbance on each individual lot, as determined by the following:

    i. For a single-family residential project site where the lots are one-half (0.5) acre or more, one-half (0.5) acre of land disturbance must be used as the expected lot disturbance.
    ii. For a single-family residential project site where the lots are less than one half (0.5) acre in size, the total lot must be calculated as being disturbed.
    iii. To calculate lot disturbance on all other types of projects sites, such as industrial and commercial projects project sites, a minimum of one (1) acre of land disturbance must be used as the expected lot disturbance, unless the lots are less than one (1) acre in size, in which case the total lot must be calculated as being disturbed.

The calculation methods as well as the type, sizing, and placement of all stormwater pollution prevention measures for construction sites shall meet the design criteria, standards, and specifications outlined in the “Indiana Stormwater Quality Manual” or the Town of Zionsville Stormwater Technical Standards Manual. The methods and procedures included in these two references are in keeping with the above stated policy and meet the requirements of IDEM’s Rule 5.

(d) INSPECTION, MAINTENANCE, RECORD KEEPING, AND REPORTING

Following approval of the stormwater management permit by the Town and commencement of construction activities, the Town has the authority to conduct inspections of the site to ensure full compliance with the provisions of this section, the *Indiana Stormwater Quality Manual*, and the terms and conditions of the approved permit.

A self-monitoring program must be implemented by the project site owner to ensure the stormwater pollution prevention plan is working effectively. A trained individual, acceptable to the Town, shall perform a written evaluation of the project site by the end of the next business day following each measurable storm event. If there are no measurable storm events within a given week, the site should be monitored at least once in that week. Weekly inspections by the trained individual shall continue until the

entire site has been stabilized and a Notice of Termination has been issued. The trained individual should look at the maintenance of existing stormwater pollution prevention measures, including erosion and sediment control measures, drainage structures, and construction materials storage/containment facilities, to ensure they are functioning properly. The trained individual should also identify additional measures, beyond those originally identified in the stormwater pollution prevention plan, necessary to remain in compliance with all applicable statutes and regulations.

The resulting evaluation reports must include the name of the individual performing the evaluation, the date of the evaluation, problems identified at the project site, and details of maintenance, additional measures, and corrective actions recommended and completed.

The stormwater pollution prevention plan shall serve as a guideline for stormwater quality, but should not be interpreted to be the only basis for implementation of stormwater quality measures for a project site. The project site owner is responsible for implementing, in accordance with this section, all measures necessary to adequately prevent polluted stormwater runoff. Recommendations by the trained individual for modified stormwater quality measures should be implemented.

Although self-monitoring reports do not need to be submitted to the Town, the Town has the right to request complete records of maintenance and monitoring activities involving stormwater pollution prevention measures. All evaluation reports for the project site must be made available to the Town, in an organized fashion, within forty-eight (48) hours upon request.

SECTION 12-5

STORMWATER QUALITY MANAGEMENT FOR POST-CONSTRUCTION

(a) APPLICABILITY AND EXEMPTIONS

In addition to the requirements of Section 12-4, the stormwater pollution prevention plan, which is to be submitted to the Town as part of the stormwater management permit application, must also include post-construction stormwater quality measures. These measures are incorporated as a permanent feature into the site plan and are left in place following completion of construction activities to continuously treat stormwater runoff from the stabilized site. Any project located within the corporate boundaries of the Town of Zionsville that includes clearing, grading, excavation, and other land disturbing activities, resulting in the disturbance of 1 acre or more of total land area, is subject to the requirements of this section. This includes both new development and re-development, and disturbances of less than one (1) acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land, within the MS4 area.

The requirements under this section do not apply to the following activities:

1. agricultural land disturbing activities; or
2. forest harvesting activities; or
3. construction activities associated with a single family residential dwelling disturbing less than 1 acre, when the dwelling is not part of a larger common plan of development or sale; or
4. single family residential developments consisting of four or less lots; or
5. a single-family residential strip development where the developer offers for sale or lease without land improvements and the project is not part of a larger common plan of development of sale; or
6. individual building lots within a larger permitted project.

The requirements under this section do not apply to the following activities, provided other applicable state permits contain provisions requiring immediate implementation of soil erosion control measures:

1. Landfills that have been issued a certification of closure under 329 IAC 10.
2. Coal mining activities permitted under IC 14-34.
3. Municipal solid waste landfills that are accepting waste pursuant to a permit issued by the Indiana Department of Environmental Management under 329 IAC 10 that contains equivalent stormwater requirements, including the expansion of landfill boundaries and construction of new cells either within or outside the original solid waste permit boundary.

It will be the responsibility of the project site owner to complete a stormwater permit application and ensure that a sufficient construction plan is completed and submitted to the Town in accordance with Section 12-6 of this Ordinance. It will be the responsibility of the project site owner to ensure proper construction and installation of all stormwater BMP's in compliance with this Ordinance and with the approved stormwater management permit, and to notify the Town with a sufficient notice of termination letter upon completion of the project and stabilization of the site. However, all eventual property owners of stormwater quality facilities meeting the applicability requirements must comply with the requirements of this section and this Ordinance.

(b) POLICY ON STORMWATER QUALITY MANAGEMENT

It is recognized that developed areas, as compared to undeveloped areas, generally have increased imperviousness, decreased infiltration rates, increased runoff rates, and increased concentrations of

pollutants such as fertilizers, herbicides, greases, oil, salts and other pollutants. As new development and re-development continues within the corporate boundaries of the Town of Zionsville, measures must be taken to intercept and filter pollutants from stormwater runoff prior to reaching regional creeks, streams, and rivers. Through the use of Best Management Practices (BMP's), stormwater runoff will be filtered and harmful amounts of sediment, nutrients, and contaminants will be removed. The Town has adopted a policy that the control of Stormwater quality will be based on the management of Total Suspended Solids (TSS).

The project site owner must submit to the Town a Storm Water Pollution Prevention Plan (SWPPP) that shows placement of appropriate BMP(s) from a pre-approved list of BMP's specified in the Town of Zionsville Stormwater Technical Standards Manual. The noted BMP's must be designed, constructed, and maintained according to guidelines provided or referenced in the Town of Zionsville Stormwater Technical Standards Manual. Practices other than those specified in the pre-approved list may be utilized. However, the burden of proof, as to whether the performance (minimum 80% TSS removal) and ease of maintenance of such practices will be according to guidelines provided in the Town of Zionsville Stormwater Technical Standards Manual, would be placed with the applicant. Details regarding the procedures and criteria for consideration of acceptance of such BMP's are provided in the Town of Zionsville Stormwater Technical Standards Manual.

Gasoline outlets and refueling areas must install appropriate practices to reduce lead, copper, zinc, and hydrocarbons in stormwater runoff. These requirements will apply to all new facilities and existing facilities that replace their tanks.

(c) CALCULATIONS AND DESIGN STANDARDS AND SPECIFICATIONS

Calculation of land disturbance should follow the guidelines discussed in Section 12-3(c).

The calculation methods as well as the type, sizing, and placement of all stormwater quality management measures, or BMP's shall meet the design criteria, standards, and specifications outlined in the *Indiana Stormwater Quality Manual* or the Town of Zionsville Stormwater Technical Standards Manual. The methods and procedures included in these two references are in keeping with the above stated policy and meet the requirements of IDEM's Rule 13.

(d) EASEMENT REQUIREMENTS

All stormwater quality management systems, including detention or retention basins, filter strips, pocket wetlands, in-line filters, infiltration systems, conveyance systems, structures and appurtenances located outside of the right-of-way shall be incorporated into permanent easements. For developments occurring within the Town of Zionsville at the discretion of the Boone County Surveyor and/or Drainage Board, the developer shall petition to establish the noted system as a portion of regulated drain pursuant to the provisions of I.C.-36-9-27-54, and the drainage plan shall not be accepted until such petition is submitted in a form accepted by the County Surveyor and the County Drainage Board. For the purposes of monitoring, inspection, and general maintenance activities, the petition should include a 30-foot wide perimeter beyond the actual footprint of the stormwater quality management facility.

(e) INSPECTION, MAINTENANCE, RECORD KEEPING, AND REPORTING

After the approval of the stormwater management permit by the Town and the commencement of construction activities, the Town has the authority to conduct inspections of the work being done to ensure full compliance with the provisions of this section, the Town of Zionsville Stormwater Technical Standards Manual, and the terms and conditions of the approved permit.

Stormwater quality facilities shall be maintained in good condition, in accordance with the Operation and Maintenance procedures and schedules listed in the *Indiana Stormwater Quality Manual* or the Town of Zionsville Stormwater Technical Standards Manual, and the terms and conditions of the approved stormwater permit, and shall not be subsequently altered, revised, or replaced except in accordance with the approved stormwater permit, or in accordance with accepted amendments or revisions in the permit. Following construction completion, inspection and maintenance of stormwater quality facilities shall be the long-term responsibility of the Town. Stormwater detention/retention basins may be donated to the Town or other unit of government designated by the Town, for ownership and permanent maintenance providing the Town or other governmental unit is willing to accept responsibility.

The Town also has the authority to perform long-term, post-construction inspection of all public or privately owned stormwater quality facilities. The inspection will cover physical conditions, available water quality storage capacity and the operational condition of key facility elements. Noted deficiencies and recommended corrective action will be included in an inspection report.

SECTION 12-6

PERMIT REQUIREMENTS AND PROCEDURES

(a) CONCEPTUAL DRAINAGE PLAN REVIEW

In order to gain an understanding of the drainage requirements for a specific project, a developer may submit conceptual drainage plans and calculations for review by the Town. The direction provided by the Town during such a review is based on preliminary data and shall not be construed as an acceptance or binding on either party. The following is a general listing of minimum data requirements for the review of conceptual drainage plans:

1. Two (2) complete sets of conceptual plans showing general project layout, including existing and proposed drainage systems (plan sheets must be larger than 11" by 17", but not to exceed 24" by 36").
2. General description of the existing and proposed drainage systems in narrative form .
3. Watershed Boundaries with USGS Contours or best information possible.
4. Existing watercourse or regulated drains.

(b) PERMIT PROCEDURES

This section applies to all development, or re-development of land, that results in land disturbance of one (1) acre or more. Individual lots with land disturbance less than one (1) acre, that are developed within a larger permitted project site, should refer to Section 4 for plan review requirements and procedures. Figure 1 is a flowchart summarizing the plan review/permit approval process and can be found at the end of this section.

All projects located within the corporate boundaries of the Town of Zionsville lie within the Town's MS4 area boundary by default, as is shown in Appendix B. The project site owner shall submit an application for a stormwater management permit to the Town. The application will include an Initial Notice of Intent letter (NOI) that will also serve as permit application form, proof of public notice, construction plan sheets, a stormwater drainage technical report, a stormwater pollution prevention plan, and any other necessary support information. Specific information to be included in the application can be found in Section 3 below. Four (4) copies of each application must be submitted to the Town. The Town may, at its discretion, require one or more copies be submitted to the Boone County Surveyor, or other entity deemed appropriate by the Town. Additionally, a digital copy of the construction plans is required in a format accepted by the Town.

After the Town's receipt of the application, the applicant will be notified as to whether their application was complete or insufficient. The applicant will be asked for additional information if the application is insufficient. If the application is complete, the Town will forward one copy of the application to the Soil and Water Conservation District (SWCD) for its review and comment within a 10-day period. The remaining three (3) copies will be reviewed in detail by the Town and/or its plan review consultant(s). Once all comments have been received and review completed, the Town will either approve the project, request modifications or deny the project. If the applicant does not agree with or accept the review findings and wishes to seek an appeal, the Town will place the project on the agenda of the next regularly scheduled meeting of the Zionsville Town Council, provided the agenda for the meeting has not yet been advertised or published. If time for notification does not allow, the project shall be placed on the following regularly scheduled meeting of the Zionsville Town Council. If the project must go through a scheduled meeting, the Town will furnish the applicant a complete list of comments and objections to the plans and accompanying data prior to the scheduled meeting. After the scheduled meeting, the Town will either issue a permit, request modifications to the construction plans, or deny the project.

The project site owner must notify the Town and IDEM 48 hours before beginning construction. Notification shall be in the form of an updated IDEM NOI form. Once a permit has been issued and the updated NOI submitted to the Town and IDEM 48 hours before the beginning of construction, construction may commence. Once construction starts, the project owner shall monitor construction activities and inspect all stormwater pollution prevention measures in compliance with this Ordinance and the terms and conditions of the approved permit. Upon completion of construction activities, as-built plans must be submitted to the Town. A Notice of Termination (NOT) shall be sent to the Town once the construction site has been stabilized and all temporary erosion and sediment control measures have been removed. The Town, or its representative, shall inspect the construction site to verify that the requirements for an NOT have been met. Once the applicant receives a "verified" copy of the NOT, they must forward a copy to IDEM. Permits issues under this scenario will expire 5 years from the date of issuance. If construction is not completed within 5 years, the NOI must be resubmitted at least 90 days prior to expiration. No Rule 5 (327 IAC 15-5) permit is required from IDEM for projects within the MS4 area boundary, since the Town is the permitting authority.

(c) INFORMATION REQUIREMENTS

Specific projects or activities may be exempt from all or part of the informational requirements listed below. Exemptions are detailed in the "Applicability and Exemptions" Sections of Sections 12-2 through 12-5. If a project or activity is exempt from any or all requirements of this ordinance, an application should be filed listing the exemption criteria met, in lieu of the information requirements listed below. This level of detailed information is not required from individual lots, disturbing less than 1 acre of land, developed within a larger permitted project site. Review and acceptance of such lots is covered under Section 12-c-4.

The different elements of a permit submittal include a Notice of Intent (NOI), proof of publication of a public notice, construction plans, a stormwater drainage technical report, a stormwater pollution prevention plan for active construction sites, a post-construction stormwater pollution prevention plan, and any other necessary supporting information. All plans, reports, calculations, and narratives shall be signed and sealed by a professional engineer or a licensed surveyor, registered in the State of Indiana.

1. Initial Notice of Intent

The NOI is a standard form developed by the Indiana Department of Environmental Management, which requires general project information. The NOI form should be completed in full and accompanied by proof of publication in a newspaper of general circulation, in the affected area, that notified the public that a construction activity is to commence. The publication must include the following language:

> "(Company name, address) is submitting an NOI letter to notify the Town of Zionsville, Indiana and the Indiana Department of Environmental Management of our intent to comply with the requirements of the Town of Zionsville Stormwater Management Ordinance, as well as the requirements of 327 IAC 15-5 and 327 IAC 15-13, to discharge stormwater from construction activities for the following project: (name of the construction project, address of the location of the construction project, and Parcel Identification Number). Run-off from the project site will discharge to (stream(s) receiving the discharge(s))."

2. Construction Plans

Construction plan sheets (not to exceed 24" by 36" in size) and an accompanying narrative report shall describe and depict the existing and proposed conditions. Construction plans need to include the following detailed items:

i. Project narrative and supporting documents, including the following information:

a. An index indicating the location, in the construction plans, of all information required by this subsection.
b. Description of the nature and purpose of the project.
c. A copy of a legal boundary survey for the site, performed in accordance with Rule 12 of Title 865 of the Indiana Administrative Code or any applicable and subsequently adopted rule or regulation for the subdivision limits, including all drainage easements and wetlands.
d. Soil properties, characteristics, limitations, and hazards associated with the project site and the measures that will be integrated into the project to overcome or minimize adverse soil conditions.
e. General construction sequence of how the project site will be built, including phases of construction.
f. 14-Digit Watershed Hydrologic Unit Code.
g. A reduced plat or project site map showing the lot numbers, lot boundaries, easements, and road layout and names. The reduced map must be legible and submitted on a sheet or sheets no larger than eleven (11) inches by seventeen (17) inches for all phases or sections of the project site.
h. A topographic map of the land to be developed and such adjoining land whose topography may affect the layout or drainage of the development. The contour intervals shall be one (1) foot when slopes are less than or equal to two percent (<2%) and shall be two (2) feet when slopes exceed two percent (>2%). All elevations shall be given in either National Geodetic Vertical Datum of 1929 (NGVD) or North American Vertical Datum of 1988 (NAVD). The horizontal datum of topographic map shall be based on Indiana State Plane Coordinates, NAD83. The map will contain a notation indicating these datum information.

a] If the project site is less than or equal to two (2) acres in total land area, the topographic map shall include all topography of land surrounding the site to a distance of at least one hundred (100) feet.

b] If the project site is greater than two (2) acres in total land area, the topographic map shall include all topography of land surrounding the site to a distance of at least two hundred (200) feet..

i. Identification of any other state or federal water quality permits that are required for construction activities associated with the owner's project site.
j. Proof of Errors and Omissions Insurance for the registered professional engineer or licensed surveyor showing a minimum amount of $1,000,000 in coverage.

ii. Vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads, such as a USGS topographic quadrangle map, or county or municipal road map.

iii. An existing project site layout that must include the following information:

a. Location, name, and normal water level of all wetlands, lakes, ponds, and water courses on, or adjacent to, the project site.
b. Location of all existing structures on the project site.

c. One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exists.
d. Soil map of the predominant soil types, as determined by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey, or as determined by a soil scientist. Hydrologic classification for soils should be shown when hydrologic methods requiring soils information are used. A soil legend must be included with the soil map.
e. Identification and delineation of vegetative cover such as grass, weeds, brush, and trees on the project site.
f. Location of storm, sanitary, combined sewer, and septic tank systems and outfalls.
g. Land use of all adjacent properties.
h. Identification and delineation of sensitive areas.
i. Existing topography at a contour interval appropriate to indicate drainage patterns.
j. The location of regulated drains, farm drains, inlets and outfalls, if any of record.
k. Location of all existing cornerstones within the proposed development and a plan to protect and preserve them.

iv. Final project site layout, including the following information:

a. Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas.
b. One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exist.
c. Proposed final topography, at a contour interval appropriate to indicate drainage patterns.

v. A grading plan, including the following information:

a. Delineation of all proposed land disturbing activities, including off-site activities that will provide services to the project site.
b. Location of all soil stockpiles and borrow areas.
c. Information regarding any off-site borrow, stockpile, or disposal areas that are associated with a project site, and under the control of the project site owner.
d. Existing and proposed topographic information.

vi. A drainage plan, including the following information:

a. An estimate of the peak discharge, based on the ten (10) year storm 24-hour event, of the project site for post-construction conditions.
b. The proposed 100-year and 10-year release rates determined for the site, showing the methodology used to calculate them and detailing considerations given to downstream restrictions (if any) that may affect the calculated allowable release rates.
c. Calculation showing peak runoff rate after development for the 10-year and 100-year return period 24-hour storms do not exceed the respective allowable release runoff rates.
d. Location, size, and dimensions of all existing streams to be maintained, and new drainage systems such as culverts, bridges, storm sewers, conveyance channels, and 100-year overflow paths/ponding areas shown as hatched areas, along with all associated easements.
e. Locations where stormwater may be directly discharged into groundwater, such as abandoned wells or sinkholes. Please note if none exists.
f. Locations of specific points where stormwater discharge will leave the project site.
g. Name of all receiving waters. If the discharge is to a separate municipal storm sewer, identify the name of the municipal operator and the ultimate receiving water.

h. Location, size, and dimensions of features such as permanent retention or detention facilities, including natural or constructed wetlands, used for the purpose of stormwater management. Include existing retention or detention facilities that will be maintained, enlarged, or otherwise altered and new ponds or basins to be built and the basis of their design.
i. The estimated depth and amount of storage required by design of the new ponds or basins.
j. One or more typical cross sections of all existing and proposed channels or other open drainage facilities carried to a point above the 100-year high water and showing the elevation of the existing land and the proposed changes, together with the high water elevations expected from the 100 year storm under the controlled conditions called for by this ordinance, and the relationship of structures, streets, and other facilities.

vii. Any other information required by the Town in order to thoroughly evaluate the submitted material.

3. Stormwater Drainage Technical Report

A written stormwater drainage technical report must contain a discussion of the steps taken in the design of the stormwater drainage system. The technical report needs to include the following detailed items:

i. A summary report, including the following information:

a. The significant drainage problems associated with the project;
b. The analysis procedure used to evaluate these problems and to propose solutions;
c. Any assumptions or special conditions associated with the use of these procedures, especially the hydrologic or hydraulic methods;
d. The proposed design of the drainage control system; and
e. The results of the analysis of the proposed drainage control system showing that it does solve the project's drainage problems. Any hydrologic or hydraulic calculations or modeling results must be adequately cited and described in the summary description. If hydrologic or hydraulic models are used, the input and output files for all necessary runs must be included in the appendices. A map showing any drainage area subdivisions used in the analysis must accompany the report.

ii. A Hydrologic/Hydraulic Analysis, consistent with the methodologies and calculation included in the Town of Zionsville Stormwater Technical Standards Manual, and including the following information:

a. A hydraulic report detailing existing and proposed drainage patterns on the subject site. The report should include a description of present land use and proposed land use. Any off-site drainage entering the site should be addressed as well. This report should be comprehensive and detail all of the steps the engineer took during the design process.
b. All hydrologic and hydraulic computations should be included in the submittal. These calculations should include, but are not limited to: runoff curve numbers and runoff coefficients, runoff calculations, stage-discharge relationships, times-of-concentration and storage volumes.
c. Copies of all computer runs. These computer runs should include both the input and the outputs. Electronic copies of the computer runs with input files must also be included.
d. A set of exhibits should be included showing the drainage sub-areas and a schematic detailing of how the computer models were set up.

e. A conclusion which summarizes the hydraulic design and details how this design satisfies this ordinance.

4. Stormwater Pollution Prevention Plan for Construction Sites

A stormwater pollution prevention plan associated with construction activities must be designed to, at least, meet the requirements of this Ordinance and must include the following:

i. Location, dimensions, detailed specifications, and construction details of all temporary and permanent stormwater quality measures.
ii. Temporary stabilization plans and sequence of implementation.
iii. Permanent stabilization plans and sequence of implementation.
iv. Temporary and permanent stabilization plans shall include the following:

   a. Specifications and application rates for soil amendments and seed mixtures.
   b. The type and application rate for anchored mulch.

v. Construction sequence describing the relationship between implementation of stormwater quality measures and stages of construction activities.
vi. A typical erosion and sediment control plan for individual lot development.
vii. Self-monitoring program including plan and procedures.
viii. A description of potential pollutant sources associated with the construction activities, which may reasonably be expected to add a significant amount of pollutants to stormwater discharges.
ix. Material handling and storage associated with construction activity shall meet the spill prevention and spill response requirements in 327 IAC 2-6.1.
x. Name, address, telephone number, and list of qualifications of the trained individual in charge of the mandatory stormwater pollution prevention self-monitoring program for the project site.

5. Post-Construction Storm Water Pollution Prevention Plan

The post-construction storm water pollution prevention plan must include the following information:

i. A description of potential pollutant sources from the proposed land use, which may reasonably be expected to add a significant amount of pollutants to stormwater discharges.
ii. Location, dimensions, detailed specifications, and construction details of all post-construction stormwater quality measures.
iii. A description of measures that will be installed to control pollutants in stormwater discharges that will occur after construction activities have been completed. Such practices include infiltration of run-off, flow reduction by use of open vegetated swales and natural depressions, buffer strip and riparian zone preservation, filter strip creation, minimization of land disturbance and surface imperviousness, maximization of open space, and stormwater retention and detention ponds.
iv. A sequence describing when each post-construction stormwater quality measure will be installed.
v. Stormwater quality measures that will remove or minimize pollutants from stormwater run-off.
vi. Stormwater quality measures that will be implemented to prevent or minimize adverse impacts to stream and riparian habitat.
vii. A narrative description of the maintenance guidelines for all post-construction stormwater quality measures to facilitate their proper long term function. This narrative description shall be made available to future parties who will assume responsibility for the operation and maintenance of the post-construction stormwater quality measures.

(d) REVIEW OF INDIVIDUAL LOTS WITHIN A PERMITTED PROJECT

For individual lots disturbing less than 1 acre, developed within a larger permitted project, a formal review and issuance of an Individual Lot plot Plan Permit will be required before a building permit can be issued. All stormwater management measures necessary to comply with this Ordinance must be implemented in accordance with permitted plan for the larger project.

The following information must be submitted to the Town, for review and acceptance, by the individual lot operator, whether owning the property or acting as the agent of the property owner, as part of a request for review and issuance of an Individual Lot Plot Plan Permit that must be obtained prior to the issuance of a building permit.

1. A site layout for the subject lot and all adjacent lots showing building pad location, dimensions, and elevations, and the drainage patterns and swales.
2. Erosion and sediment control plan that, at a minimum, includes the following measures:
    i. Installation and maintenance of a stable construction site access.
    ii. Installation and maintenance of appropriate perimeter erosion and sediment control measures prior to land disturbance.
    iii. Minimization of sediment discharge and tracking from the lot.
    iv. Clean-up of sediment that is either tracked or washed onto roads. Bulk clearing of sediment shall not include flushing the area with water. Cleared sediment must be redistributed or disposed of in a manner that is in compliance with all applicable statutes and rules.
    v. Adjacent lots disturbed by an individual lot operator must be repaired and stabilized with temporary or permanent surface stabilization.
    vi. Self-monitoring program including plan and procedures.
3. Certification of Compliance stating that the individual lot plan is consistent with the stormwater management permit, as approved by the Town, for the larger project.
4. Name, address, telephone number, and list of qualifications of the trained individual in charge of the mandatory stormwater pollution prevention self-monitoring program for the project site.

The individual lot operator is responsible for installation and maintenance of all erosion and sediment control measures until the site is stabilized.

(e) CHANGES TO PLANS

Any changes or deviations in the detailed plans and specifications after approval of the applicable stormwater management permit shall be filed with, and accepted by, the Town of Zionsville prior to the land development involving the change. Copies of the changes, if accepted, shall be attached to the original plans and specifications.

(f) FEE STRUCTURE

1. FEE AMOUNT

As a condition of the submittal and the review of development plans by the Town, the applicant shall agree to pay the Town the applicable fee, as set by the Town with respect to the review of all drainage submittals, preliminary plans, final plans, construction plans and accompanying information and data, as well as prepaid inspection fees.

2. TIME OF PAYMENT

After the meeting at which the Town is scheduled to consider acceptance of the applicant's final stormwater management plan, the Town will furnish a written statement to the applicant specifying the total amount due the Town in connection with the review of the applicant's submittals, plans and accompanying information and data, including the amount required to be paid by applicant for review and pre-paid inspection fees.

As a condition of acceptance of final drainage plans by the Town, applicant shall pay to the Town the sum set forth in said statement. The Town may issue such a billing statement before the project advances to the final acceptance stage, and such payment is due by applicant upon receipt of said billing statement regardless of whether the project is advanced to the final acceptance stage.

The Town shall have the right to not accept the drainage improvements or to not approve the advancement of any project for which the applicable fees have not been paid.

3. METHOD OF PAYMENT

Fees shall be paid by one of the following methods:

- Check
- Certified Check
- Cashier's Check
- Money Order

All checks shall be made payable to the: Town of Zionsville
1100 W. Oak St.
Zionsville, IN 46077

4. REFUND OF PAYMENT

Fees are refundable **only** if the Town determines that compliance by the development or project to this Ordinance is not necessary.

5. FEE SCHEDULE

RESERVED

(g) REQUIRED ASSURANCES

As a condition of approval and issuance of the permit, the Town of Zionsville shall require the applicant to provide assurance in form of an irrevocable letter of credit or a bond when the stormwater management plan has been accepted and before construction begins. Said assurance will guarantee a good faith execution of the stormwater drainage plan, the stormwater pollution prevention plan, the stormwater quality management plan, and any permit conditions. The assurance shall be for an amount equal to 110 percent of the total costs of all stormwater management measures for the entire project. The above-mentioned costs shall be based on an estimate as prepared by a registered engineer or land surveyor. Said costs shall be for the installation and ongoing monitoring and maintenance of erosion control measures and the construction and ongoing monitoring and maintenance of storm drainage infrastructure, detention/retention facilities, and stormwater quality BMP's, as regulated under this Ordinance, until the construction is completed, the site is stabilized, and as-built plans are accepted by the Town. Assurances shall be for a minimum of $5,000. All other performance bonds, maintenance bonds or other assurances required by the Town in accordance with any and all other ordinances shall also apply and so be required. Local governmental jurisdictions may require additional performance and/or maintenance assurances. The intent of this assurance is not only to complete the installation of storm drain infrastructure for the project, but also to assure that adequate stormwater pollution prevention measures are properly installed and maintained. If adequate assurances are set aside by the project site owner for the overall project, proof of total assurance can be submitted in place of an individual stormwater assurance.

(h) TERMS AND CONDITIONS OF PERMITS

In granting a stormwater management permit, the Town may impose such terms and conditions as are reasonably necessary to meet the purposes of this Ordinance. The project site owner shall insure compliance with such terms and conditions. Non-compliance with the terms and conditions of permits will be subject to enforcement as described in Section 12-7.

The project site owner shall inform all general contractor, construction management firms, grading or excavating contractors, utility contractors, and the contractors that have primary oversight on individual building lots of the terms and conditions of the stormwater management permit and the schedule for proposed implementation.

In the event that a project site is determined to impact or discharge to a Sensitive Area or is located in an Impact Drainage Area, the Town may require more stringent stormwater quantity and quality measures than detailed in this Ordinance or in the *Indiana Stormwater Quality Manual*.

1. Determination of Sensitive Areas

Sensitive Areas include highly erodible soils, wetlands, threatened or endangered species habitat, outstanding waters, impaired waters, recreational waters, and surface drinking water sources. A listing of highly erodible soils, outstanding water, impaired water, recreation water and surface drinking water sources can be found in the Stormwater Technical Standards Manual. If wetlands are suspected on a site, a wetland delineation should be completed in accordance with the methodology established by the U.S. Army Corps of Engineers (COE). The presence of threatened or endangered species habitat will be determined by the Town during the permit review process. Special terms and conditions for development determined to impact or discharge to any Sensitive Area shall be included in the stormwater management permit.

2. Determination Of Impact Drainage Areas

The Town is authorized, but is not required, to classify certain geographical areas as Impact Drainage Areas. In determining Impact Drainage Areas, the Town shall consider such factors as topography, soil type, capacity of existing drains, and distance from adequate drainage facility. The following areas shall be designated as Impact Drainage Areas, unless good reason for not including them is presented to the Town.

i. A floodway or floodplain as designated by the most updated FEMA Code dealing with floodplain regulation.

ii. Land within 75 feet of each bank of any ditch within the Town's system.

iii. Land within 75 feet of the centerline of any drain tile or enclosed conduit within the Town's system.

Land that does not have an adequate outlet, taking into consideration the capacity and depth of the outlet, may be designated as an Impact Drainage Area by the Town. Special terms and conditions for development within any Impact Drainage Area shall be included in the stormwater management permit.

(i) CERTIFICATION OF AS-BUILT PLANS

After completion of construction of the project and before final acceptance of the stormwater management plan, a professionally prepared and certified 'as-built' set of plans shall be submitted to the Town for review. Additionally, a digital copy of the 'as-built' plans is required in a format acceptable to the Town.

These plans shall include all pertinent data relevant to the completed storm drainage system and stormwater management facilities, and shall include:

1. Pipe size and pipe material
2. Invert elevations
3. Top rim elevations
4. Pipe structure lengths
5. BMP types, dimensions, and boundaries/easements
6. “As-planted” plans for BMP’s, as applicable
7. Data and calculations showing detention basin storage volume
8. Data and calculations showing BMP treatment capacity
9. Certified statement on plans stating the completed storm drainage system and stormwater management facilities substantially comply with construction plans and the stormwater management permit as approved by the Town. (See certificate in the Stormwater Technical Standards Manual.)

The property owner, developer, or contractor shall be required to file a three-year maintenance bond or other acceptable guarantee with the Town, prior to acceptance, in an amount not to exceed twenty five percent (25%) of the cost of the stormwater drainage system located outside the public road right-of-ways, and in a form satisfactory to the Town’s attorney and/or Town Manager in order to assure that such stormwater system installation was done according to standards of good workmanship, that the materials used in the construction and installation were of good quality and construction, and that such project was done in accordance with the accepted plans, and this Ordinance. The bond or other acceptable guarantee shall be in effect for a period of three years after the date of the final project acceptance by the Town.

To verify that all regulated drain tiles are functioning properly, visual recordings (via closed circuit television) of such tile drains shall be required, once following the completion of installation (including the installation of all utility mains) and the second time before release of maintenance bonds. These visual recordings will be scheduled by the Town and paid for by the developer. Notices shall be provided to the Town within 72 hours following the completion of installation and again at least 60 days prior to the expiration date of the maintenance bond so that the noted recordings may be scheduled. Reports summarizing the results of the noted visual recordings shall be reviewed and accepted by the Town before the plat is recommended for recording and again before the maintenance bond shall be recommended to be released.

Figure 1: Permit Approval Process

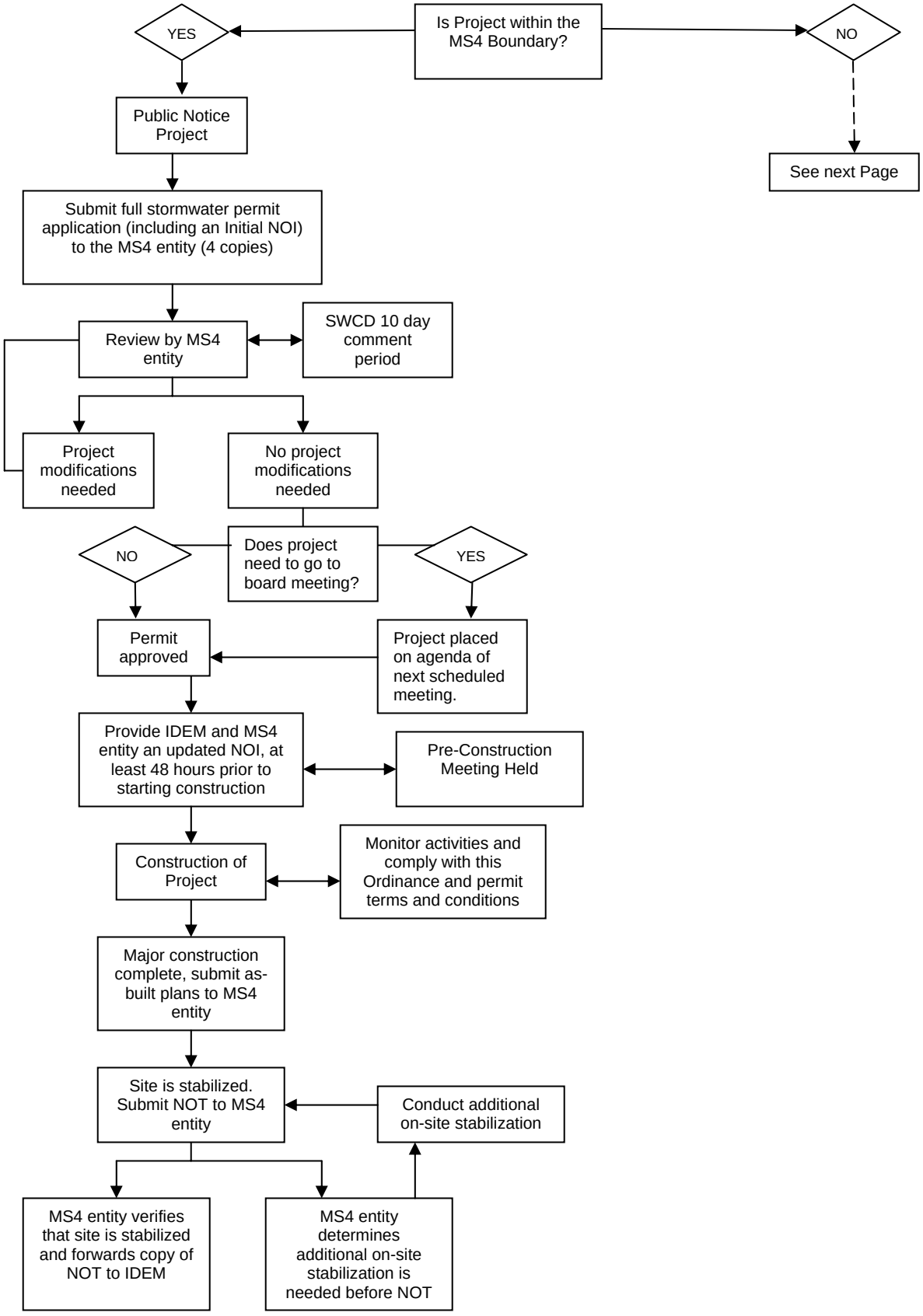
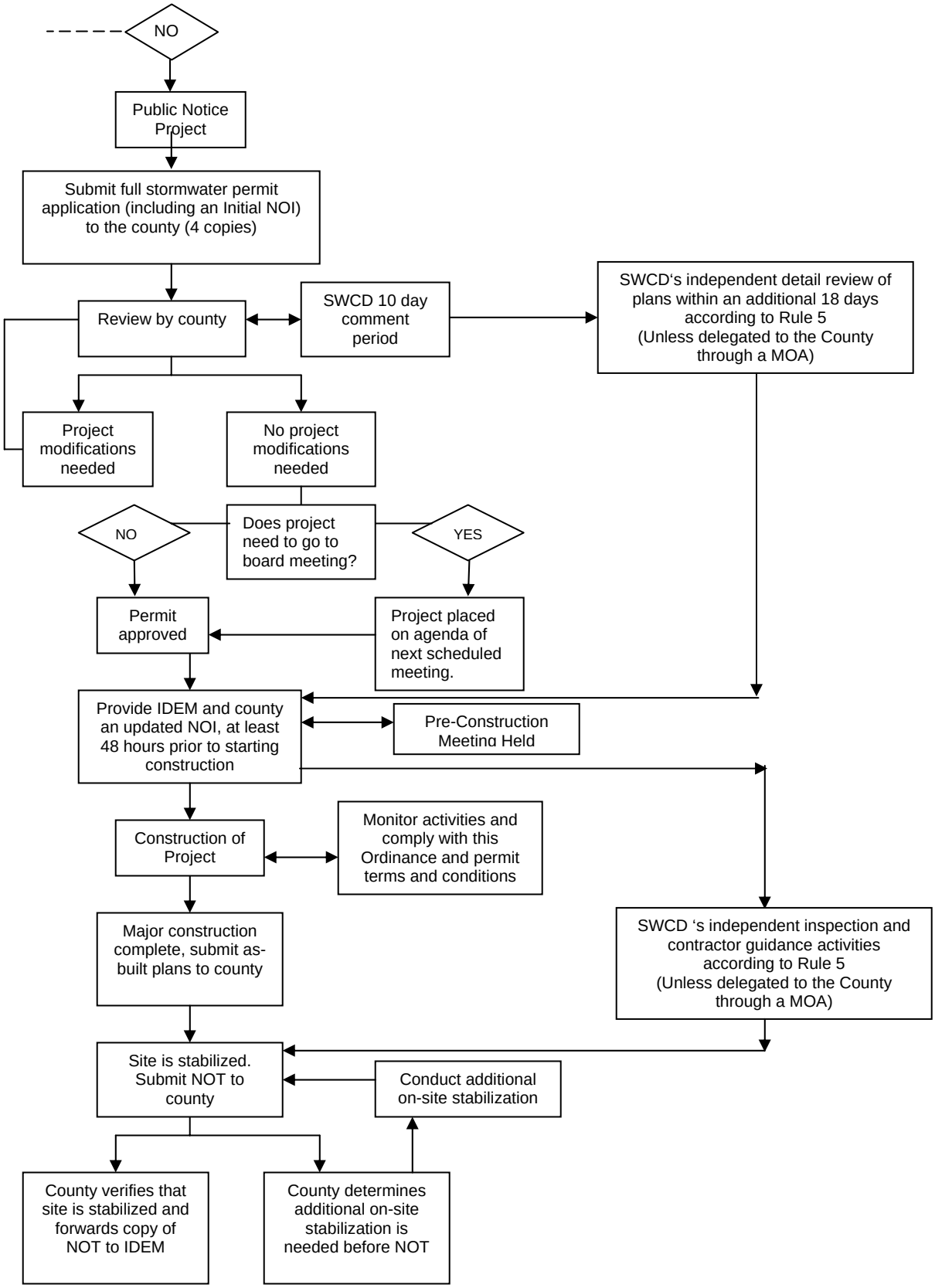


Figure 1: Permit Approval Process (cont.)



SECTION 12-7

ENFORCEMENT

(a) COMPLIANCE WITH THIS ORDINANCE

In addition to the requirements of this Ordinance, compliance with the requirements set forth in the local Zoning Ordinances is also necessary. Compliance with all applicable ordinances of the Town of Zionsville as well as with applicable State of Indiana statues and regulations shall also be required. Unless otherwise stated, all other specifications referred to in this Ordinance shall be the most recent edition available. Violations of the requirements of this Ordinance are subject to the penalties listed below.

(b) PENALTIES FOR VIOLATIONS

Any person found in violation of any provision of this Ordinance shall be responsible for a civil infraction and subject to a maximum fine of $2,500 for a first offense, and a maximum of $2,500 for a subsequent offense, plus costs, damages, and expenses. Each day such violation occurs or continues shall be deemed a separate offense and shall make the violator liable for the imposition of a fine for each day. The rights and remedies provided for in this section are cumulative and in addition to any other remedies provided by law. An admission or determination of responsibility shall not exempt the offender from compliance with the requirements of this Ordinance.

Any person who aids or abets a person in a violation of this Ordinance shall be subject to the penalties provided in this section.

For purposes of this section, "subsequent offense" means a violation of the provisions of this Ordinance committed by the same person within 12 months of a previous violation of the same provision of this Ordinance for which said person admitted responsibility or was adjudicated to be responsible.

(c) STOP WORK ORDER

In addition to the penalties listed above, if land disturbance activities are conducted contrary to the provisions of this Ordinance or accepted final stormwater management plans, the Town may order the work stopped by notice in writing served on any person engaged in the doing or causing of such work to be done, and any such persons shall forthwith stop such work until authorized by the Town to proceed with the work. The Town may also undertake or cause to be undertaken, any necessary or advisable protective measures to prevent violations of this Ordinance or to avoid or reduce the effects of noncompliance herewith. The cost of any such protective measures shall be the responsibility of the owner of the property upon which the work is being done and the responsibility of any person carrying out or participating in the work.

Any person who neglects or fails to comply with a stop work order shall, upon conviction, be guilty of a misdemeanor, punishable by a fine of not less than $1,000, and such person shall also pay such costs as may be imposed in the discretion of the court. A permit reinstatement fee may also be assessed by the Town.

(d) FAILURE TO COMPLY OR COMPLETE

In addition to any other remedies, should any owner fail to comply with the provisions of this ordinance, the Town may, after giving notice and opportunity for compliance, have the necessary work done, and the owner shall be required to promptly reimburse the Town for all costs of such work.

(e) SUSPENSION OF ACCESS TO THE STORM DRAIN SYSTEM

1. Suspension due to Emergency Situations

The Town may, without prior notice, suspend storm drain system discharge access to a person when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the storm drain system or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the Town, through any of its departments or assigns may take such steps as deemed necessary to prevent or minimize damage to the storm drain system or Waters of the United States, or to minimize danger to persons.

2. Suspension due to the Detection of Illicit Discharge

Any person discharging to the storm drain system in violation of this Ordinance may have their storm drain system access terminated if such termination would abate or reduce an illicit discharge. The Town will notify a violator of the proposed termination of its MS4 access. The violator may petition the Town Council of the Town of Zionsville for a reconsideration and hearing.

(f) CORRECTIVE ACTION

Nothing herein contained shall prevent the Town from taking such other lawful action as may be necessary to prevent or remedy any violation. All costs connected therewith shall accrue to the person or persons responsible. Costs include, but are not limited to, repairs to the storm drain system made necessary by the violation, as well as those penalties levied by the EPA or IDEM for violation of the Town's NPDES permit, attorney fees, and other costs and expenses.

(g) APPEALS

Any person to whom any provision of this Ordinance has been applied may appeal in writing, not later than 30 days after the action or decision being appealed from, to the Town Council of the Town of Zionsville the action or decision whereby any such provision was so applied. Such appeal shall identify the matter being appealed, and the basis for the appeal. The Town Council of the Town of Zionsville shall consider the appeal and make a decision whereby it affirms, rejects or modifies the action being appealed. In considering any such appeal, the Town Council of the Town of Zionsville may consider the recommendations of the Zionsville Town Staff and the comments of other persons having knowledge of the matter. In considering any such appeal, the Town Council may grant a variance from the terms of this Ordinance to provide relief, in whole or in part, from the action being appealed, but only upon finding that the following requirements are satisfied:

1. The application of the Ordinance provisions being appealed will present or cause practical difficulties for a development or development site; provided, however, that practical difficulties shall not include the need for the developer to incur additional reasonable expenses in order to comply with the Ordinance; and

2. The granting of the relief requested will not substantially prevent the goals and purposes of this Ordinance, nor result in less effective management of stormwater runoff.

APPENDIX A

ABBREVIATIONS AND DEFINITIONS

ABBREVIATIONS

BMP	Best Management Practice
COE	United States Army Corps of Engineers
CWA	Clean Water Act
EPA	Environmental Protection Agency
GIS	Geographical Information System
IDEM	Indiana Department of Environmental Management
MS4	Municipal Separate Storm Sewers
NRCS	USDA-Natural Resources Conservation Service
NPDES	National Pollution Discharge Elimination System
POTW	Publicly Owned Treatment Works
SWCD	Soil and Water Conservation District
SWPPP	Stormwater Pollution Prevention Plan
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

DEFINITIONS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Agricultural land disturbing activity. Tillage, planting, cultivation, or harvesting operations for the production of agricultural or nursery vegetative crops. The term also includes pasture renovation and establishment, the construction of agricultural conservation practices, and the installation and maintenance of agricultural drainage tile. For purposes of this rule, the term does not include land disturbing activities for the construction of agricultural related facilities, such as barns, buildings to house livestock, roads associated with infrastructure, agricultural waste lagoons and facilities, lakes and ponds, wetlands; and other infrastructure.

Base Flow. Stream discharge derived from groundwater sources as differentiated from surface runoff. Sometimes considered to include flows from regulated lakes or reservoirs.

Best Management Practices. Design, construction, and maintenance practices and criteria for stormwater facilities that minimize the impact of stormwater runoff rates and volumes, prevent erosion, and capture pollutants.

Buffer Strip. An existing, variable width strip of vegetated land intended to protect water quality and habitat.

Capacity (of a Storm Drainage Facility). The maximum flow that can be conveyed or stored by a storm drainage facility without causing damage to public or private property.

Catch Basin. A chamber usually built at the curb line of a street for the admission of surface water to a storm drain or subdrain, having at its base a sediment sump designed to retain grit and detritus below the point of overflow.

Channel. A portion of a natural or artificial watercourse which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water. It has a defined bed and banks which serve to confine the water.

Comprehensive Stormwater Management. A comprehensive stormwater program for effective management of stormwater quantity and quality throughout the community.

Constructed Wetland. A manmade shallow pool that creates growing conditions suitable for wetland vegetation and is designed to maximize pollutant removal.

Construction activity. Land disturbing activities, and land disturbing activities associated with the construction of infrastructure and structures. This term does not include routine ditch or road maintenance or minor landscaping projects.

Construction site access. A stabilized stone surface at all points of ingress or egress to a project site, for the purpose of capturing and detaining sediment carried by tires of vehicles or other equipment entering or exiting the project site.

Contiguous. Adjoining or in actual contact with.

Contour. An imaginary line on the surface of the earth connecting points of the same elevation.

Contour Line. Line on a map which represents a contour or points of equal elevation.

Contractor or subcontractor. An individual or company hired by the project site or individual lot owner, their agent, or the individual lot operator to perform services on the project site.

Conveyance. Any structural method for transferring stormwater between at least two points. The term includes piping, ditches, swales, curbs, gutters, catch basins, channels, storm drains, and roadways.

Cross Section. A graph or plot of ground elevation across a stream valley or a portion of it, usually along a line perpendicular to the stream or direction of flow.

Culvert. A closed conduit used for the conveyance of surface drainage water under a roadway, railroad, canal or other impediment.

Dechlorinated swimming pool discharge. Chlorinated water that has either sat idle for seven (7) days following chlorination prior to discharge to the MS4 conveyance, or, by analysis, does not contain detectable concentrations (less than five-hundredths (0.05) milligram per liter) of chlorinated residual.

Design Storm. A selected storm event, described in terms of the probability of occurring once within a given number of years, for which drainage or flood control improvements are designed and built.

Detention. Managing stormwater runoff by temporary holding and controlled release.

Detention Basin. A facility constructed or modified to restrict the flow of storm water to a prescribed maximum rate, and to detain concurrently the excess waters that accumulate behind the outlet.

Detention Storage. The temporary detaining of storage of stormwater in storage facilities, on rooftops, in streets, parking lots, school yards, parks, open spaces or other areas under predetermined and controlled conditions, with the rate of release regulated by appropriately installed devices.

Detention Time. The theoretical time required to displace the contents of a tank or unit at a given rate of discharge (volume divided by rate of discharge).

Detritus. Dead or decaying organic matter; generally contributed to stormwater as fallen leaves and sticks or as dead aquatic organisms.

Developer. Any person financially responsible for construction activity, or an owner of property who sells or leases, or offers for sale or lease, any lots in a subdivision.

Discharge. Usually the rate of water flow. A volume of fluid passing a point per unit time commonly expressed as cubic feet per second, cubic meters per second, gallons per minute, or millions of gallons per day.

Disposal. The discharge, deposit, injection, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that the solid waste or hazardous waste, or any constituent of the waste, may enter the environment, be emitted into the air, or be discharged into any waters, including ground waters.

Ditch. A man-made, open watercourse in or into which excess surface water or groundwater drained from land, stormwater runoff, or floodwaters flow either continuously or intermittently.

Drain. A buried slotted or perforated pipe or other conduit (subsurface drain) or a ditch (open drain) for carrying off surplus groundwater or surface water.

Drainage. The removal of excess surface water or groundwater from land by means of ditches or subsurface drains. Also see Natural drainage.

Drainage Area. The area draining into a stream at a given point. It may be of different sizes for surface runoff, subsurface flow and base flow, but generally the surface runoff area is considered as the drainage area.

Dry Well. A type of infiltration practice that allows stormwater runoff to flow directly into the ground via a bored or otherwise excavated opening in the ground surface.

Duration. The time period of a rainfall event.

Environment. The sum total of all the external conditions that may act upon a living organism or community to influence its development or existence.

Erodibility Index (EI). The soil erodibility index (EI) provides a numerical expression of the potential for a soil to erode considering the physical and chemical properties of the soil and the climatic conditions where it is located. The higher the index, the greater the investment needed to maintain the sustainability of the soil resource base if intensively cropped. It is defined to be the maximum of (RxKxLS)/T (from the Universal Soil Loss Equation) and (CxI)/T (from the Wind Erosion Equation), where R is a measure of rainfall and runoff, K is a factor of the susceptibility of the soil to water erosion, LS is a measure of the combined effects of slope length and steepness, C is a climatic characterization of windspeed and surface soil moisture and I is a measure of the susceptibility of the soil to wind erosion. Erodibility Index scores equal to or greater than 8 are considered highly erodible land.

Erosion. The wearing away of the land surface by water, wind, ice, gravity, or other geological agents. The following terms are used to describe different types of water erosion:

- *Accelerated erosion*--Erosion much more rapid than normal or geologic erosion, primarily as a result of the activities of man.

- *Channel erosion* --An erosion process whereby the volume and velocity of flow wears away the bed and/or banks of a well-defined channel.

- *Gully erosion* --An erosion process whereby runoff water accumulates in narrow channels and, over relatively short periods, removes the soil to considerable depths, ranging from 1-2 ft. to as much as 75-100 ft.

- *Rill erosion*--An erosion process in which numerous small channels only several inches deep are formed; occurs mainly on recently disturbed and exposed soils (see Rill).

- *Splash erosion*--The spattering of small soil particles caused by the impact of raindrops on wet soils; the loosened and spattered particles may or may not be subsequently removed by surface runoff.

- *Sheet erosion*--The gradual removal of a fairly uniform layer of soil from the land surface by runoff water.

Erosion and sediment control. A practice, or a combination of practices, to minimize sedimentation by first reducing or eliminating erosion at the source and then as necessary, trapping sediment to prevent it from being discharged from or within a project site.

Filter Strip. Usually a long, relatively narrow area (usually, 20-75 feet wide) of undisturbed or planted vegetation used near disturbed or impervious surfaces to filter stormwater pollutants for the protection of watercourses, reservoirs, or adjacent properties.

Floatable. Any solid waste that will float on the surface of the water.

Flood (or Flood Waters). A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow, the unusual and rapid accumulation, or the runoff of surface waters from any source.

Floodplain. The channel proper and the areas adjoining the channel which have been or hereafter may be covered by the regulatory or 100-year flood. Any normally dry land area that is susceptible to being inundated by water from any natural source. The floodplain includes both the floodway and the floodway fringe districts.

Floodway. The channel of a river or stream and those portions of the floodplains adjoining the channel which are reasonably required to efficiently carry and discharge the peak flow of the regulatory flood of any river or stream.

Floodway Fringe. That portion of the flood plain lying outside the floodway, which is inundated by the regulatory flood.

Footing Drain. A drain pipe installed around the exterior of a basement wall foundation to relieve water pressure caused by high groundwater elevation.

Garbage. All putrescible animal solid, vegetable solid, and semisolid wastes resulting from the processing, handling, preparation, cooking, serving, or consumption of food or food materials.

Geographical Information System. A computer system capable of assembling, storing, manipulation, and displaying geographically referenced information. This technology can be used for resource management and development planning.

Grade. (1) The inclination or slope of a channel, canal, conduit, etc., or natural ground surface usually expressed in terms of the percentage the vertical rise (or fall) bears to the corresponding horizontal distance. (2) The finished surface of a canal bed, roadbed, top of embankment, or bottom of excavation; any surface prepared to a design elevation for the support of construction, such as paving or the laying of a conduit. (3) To finish the surface of a canal bed, roadbed, top of embankment, or bottom of excavation, or other land area to a smooth, even condition.

Grading. The cutting and filling of the land surface to a desired slope or elevation.

Grass. A member of the botanical family Graminae, characterized by blade-like leaves that originate as a sheath wrapped around the stem.

Vegetated swale. A type of vegetative practice used to filter stormwater runoff via a vegetated, shallow-channel conveyance.

Groundwater. Accumulation of underground water, natural or artificial. The term does not include manmade underground storage or conveyance structures.

Habitat. The environment in which the life needs of a plant or animal are supplied.

Highly Erodible Land (HEL). Land that has an erodibility index of eight or more.

Hydrologic Unit Code. A numeric United States Geologic Survey code that corresponds to a watershed area. Each area also has a text description associated with the numeric code.

Hydrology. The science of the behavior of water in the atmosphere, on the surface of the earth, and underground. A typical hydrologic study is undertaken to compute flow rates associated with specified flood events.

Illicit Discharge. Any discharge to a conveyance that is not composed entirely of stormwater except naturally occurring floatables, such as leaves or tree limbs.

Impaired Waters. Waters that do not or are not expected to meet applicable water quality standards, as included on IDEM's CWA Section 303(d) List of Impaired Waters.

Impervious surface. Surfaces, such as pavement and rooftops, which prevent the infiltration of stormwater into the soil.

Individual building lot. A single parcel of land within a multi-parcel development.

Individual lot operator. A contractor or subcontractor working on an individual lot.

Individual lot owner. A person who has financial control of construction activities for an individual lot.

Infiltration. Passage or movement of water into the soil. Infiltration practices include any structural BMP designed to facilitate the percolation of run-off through the soil to groundwater. Examples include infiltration basins or trenches, dry wells, and porous pavement.

Inlet. An opening into a storm drain system for the entrance of surface storm water runoff, more completely described as a storm drain inlet.

Land-disturbing Activity. Any man-made change of the land surface, including removing vegetative cover that exposes the underlying soil, excavating, filling, transporting and grading.

Land Surveyor. A person licensed under the laws of the State of Indiana to practice land surveying.

Larger common plan of development or sale. A plan, undertaken by a single project site owner or a group of project site owners acting in concert, to offer lots for sale or lease; where such land is contiguous, or is known, designated, purchased or advertised as a common unit or by a common name, such land shall be presumed as being offered for sale or lease as part of a larger common plan. The term also includes phased or other construction activity by a single entity for its own use.

Lowest Adjacent Grade. The elevation of the lowest grade adjacent to a structure, where the soil meets the foundation around the outside of the structure (including structural members such as basement walkout, patios, decks, porches, support posts or piers, and rim of the window well.

Lowest Floor. Refers to the lowest of the following:

1. The top of the basement floor;

2. The top of the garage floor, if the garage is the lowest level of the building;

3. The top of the first floor of buildings constructed on a slab or of buildings elevated on pilings or constructed on a crawl space with permanent openings; or

4. The top of the floor level of any enclosure below an elevated building where the walls of the enclosure provide any resistance to the flow of flood waters unless:

    a] The walls are designed to automatically equalize the hydrostatic flod forces on the walls by allowing for the entry and exit of flood waters, by providing a minimum of two opening (in addition to doorways and windows) having a total area of one (1) square foot for every two (2) square feet of enclosed area subject to flooding. The bottom of all such openings shall be no higher than one (1) foot above grade.

    b] Such enclosed space shall be usable only for the parking of vehicles or building access.

Manhole. Storm drain structure through which a person may enter to gain access to an underground storm drain or enclosed structure.

Measurable storm event. A precipitation event that results in a total measured precipitation accumulation equal to, or greater than, one-half (0.5) inch of rainfall.

Mulch. A natural or artificial layer of plant residue or other materials covering the land surface which conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

Municipal Separate Storm Sewers. An MS4 meets all the following criteria: (1) is a conveyance or system of conveyances owned by the state, county, city, town, or other public entity; (2) discharges to waters of the U.S.; (3) is designed or used for collecting or conveying stormwater; (4) is not a combined sewer; and, (5) is not part of a Publicly Owned Treatment Works (POTW).

Refueling area. An operating gasoline or diesel fueling area whose primary function is to provide fuel to equipment or vehicles.

National Pollutant Discharge Elimination System. A permit developed by the U.S. EPA through the Clean Water Act. In Indiana, the permitting process has been delegated to IDEM. This permit covers aspects of municipal stormwater quality.

Natural Drainage. The flow patterns of stormwater run-off over the land in its pre-development state.

Nutrient(s). (1) A substance necessary for the growth and reproduction of organisms. (2) In water, those substances (chiefly nitrates and phosphates) that promote growth of algae and bacteria.

Open Drain. A natural watercourse or constructed open channel that conveys drainage water.

Open Space. Any land area devoid of any disturbed or impervious surfaces created by industrial, commercial, residential, agricultural, or other manmade activities.

Outfall. The point, location, or structure where a pipe or open drain discharges to a receiving body of water.

Outlet. The point of water disposal from a stream, river, lake, tidewater, or artificial drain.

Peak Discharge (or Peak Flow). The maximum instantaneous flow from a given storm condition at a specific location.

Percolation. The movement of water through soil.

Permanent stabilization. The establishment, at a uniform density of seventy percent (70%) across the disturbed area, of vegetative cover or permanent non-erosive material that will ensure the resistance of the soil to erosion, sliding, or other movement.

Pervious. Allowing movement of water.

Point Source. Any discernible, confined, and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or maybe discharged (P.L. 92-500, Section 502[14]).

Porous pavement. A type of infiltration practice to improve the quality and reduce the quantity of storm water run-off via the use of manmade, pervious pavement which allows run-off to percolate through the pavement and into underlying soils

Professional Engineer. A person licensed under the laws of the State of Indiana to practice professional engineering.

Project site. The entire area on which construction activity is to be performed.

Project site owner. The person required to submit a stormwater permit application, and required to comply with the terms of this ordinance, including a developer or a person who has financial and operational control of construction activities, and project plans and specifications, including the ability to make modifications to those plans and specifications.

Rain garden. A vegetative practice used to alter impervious surfaces, such as roofs, into pervious surfaces for absorption and treatment of rainfall.

Receiving Stream, Receiving Channel, or Receiving Water. The body of water into which runoff or effluent is discharged. The term does not include private drains, unnamed conveyances, retention and detention basins, or constructed wetlands used as treatment.

Recharge. Replenishment of groundwater reservoirs by infiltration and transmission from the outcrop of an aquifer or from permeable soils.

Redevelopment. Alterations of a property that change a site or building in such a way that there is disturbances of one (1) acre or more of land. The term does not include such activities as exterior remodeling.

Regulatory Flood. The discharge or elevation associated with the 100-year flood as calculated by a method and procedure which is acceptable to and approved by the Indiana Department of Natural Resources and the Federal Emergency Management Agency. The "regulatory flood" is also known as the "base flood".

Regulatory Floodway. See Floodway.

Release Rate - The amount of storm water release from a storm water control facility per unit of time.

Reservoir. A natural or artificially created pond, lake or other space used for storage, regulation or control of water. May be either permanent or temporary. The term is also used in the hydrologic modeling of storage facilities.

Gasoline outlet. An operating gasoline or diesel fueling facility whose primary function is the resale of fuels. The term applies to facilities that create five thousand (5,000) or more square feet of impervious surfaces, or generate an average daily traffic count of one hundred (100) vehicles per one thousand (1,000) square feet of land area.

Retention. The storage of stormwater to prevent it from leaving the development site. May be temporary or permanent.

Retention basin. A type of storage practice, that has no positive outlet, used to retain storm water run-off for an indefinite amount of time. Runoff from this type of basin is removed only by infiltration through a porous bottom or by evaporation.

Return Period - The average interval of time within which a given rainfall event will be equaled or exceeded once. A flood having a return period of 100 years has a one percent probability of being equaled or exceeded in any one year.

Riparian zone. Of, on, or pertaining to the banks of a stream, river, or pond.

Riparian habitat. A land area adjacent to a waterbody that supports animal and plant life associated with that waterbody.

Runoff. That portion of precipitation that flows from a drainage area on the land surface, in open channels, or in stormwater conveyance systems.

Runoff Coefficient - A decimal fraction relating the amount of rain which appears as runoff and reaches the storm drain system to the total amount of rain falling. A coefficient of 0.5 implies that 50 percent of the rain falling on a given surface appears as storm water runoff.

Sediment. Solid material (both mineral and organic) that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface.

Sedimentation. The process that deposits soils, debris and other unconsolidated materials either on the ground surfaces or in bodies of water or watercourses.

Sensitive Water. A waterbody in need of priority protection or remediation base on its:

providing habitat for threatened or endangered species,
usage as a public water supply intake,
relevant community value,
usage for full body contact recreation,

exceptional use classification as found in 327 IAC 2-1-11(b), outstanding state resource water classification as found in 327 IAC 2-1-2(3) and 327 IAC 2-1.5-19(b).

Site. The entire area included in the legal description of the land on which land disturbing activity is to be performed.

Slope. Degree of deviation of a surface from the horizontal, measured as a numerical ratio or percent. Expressed as a ratio, the first number is commonly the horizontal distance (run) and the second is the vertical distance (rise)--e.g., 2:1. However, the preferred method for designation of slopes is to clearly identify the horizontal (H) and vertical (V) components (length (L) and Width (W) components for horizontal angles). Also note that according to international standards (Metric), the slopes are presented as the vertical or width component shown on the numerator--e.g., 1V:2H. Slope expressions in this Ordinance follow the common presentation of slopes--e.g., 2:1 with the metric presentation shown in parentheses--e.g., (1V:2H). Slopes can also be expressed in "percents". Slopes given in percents are always expressed as (100*V/H) --e.g., a 2:1 (1V:2H) slope is a 50% slope.

Soil. The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants.

Soil and Water Conservation District. A public organization created under state law as a special-purpose district to develop and carry out a program of soil, water, and related resource conservation, use, and development within its boundaries. A subdivision of state government with a local governing body, established under IC 14-32.

Solid Waste. Any garbage, refuse, debris, or other discarded material.

Spill. The unexpected, unintended, abnormal, or unapproved dumping, leakage, drainage, seepage, discharge, or other loss of petroleum, hazardous substances, extremely hazardous substances, or objectionable substances. The term does not include releases to impervious surfaces when the substance does not migrate off the surface or penetrate the surface and enter the soil.

Storm Duration. The length of time that water may be stored in any stormwater control facility, computed from the time water first begins to be stored.

Storm Event. An estimate of the expected amount of precipitation within a given period of time. For example, a 10-yr. frequency, 24-hr. duration storm event is a storm that has a 10% probability of occurring in any one year. Precipitation is measured over a 24-hr. period.

Storm Sewer. A closed conduit for conveying collected storm water, while excluding sewage and industrial wastes. Also called a storm drain.

Stormwater. Water resulting from rain, melting or melted snow, hail, or sleet.

Stormwater Pollution Prevention Plan. A plan developed to minimize the impact of storm water pollutants resulting from construction activities.

Stormwater Runoff. The water derived from rains falling within a tributary basin, flowing over the surface of the ground or collected in channels or conduits.

Stormwater Quality Management Plan. A comprehensive written document that addresses stormwater runoff quality.

Stormwater Quality Measure. A practice, or a combination of practices, to control or minimize pollutants associated with storm water runoff.

Stormwater Drainage System - All means, natural or man-made, used for conducting storm water to, through or from a drainage area to any of the following: conduits and appurtenant features, canals, channels, ditches, storage facilities, swales, streams, culverts, streets and pumping stations.

Strip development. A multi-lot project where building lots front on an existing road.

Subdivision. Any land that is divided or proposed to be divided into lots, whether contiguous or subject to zoning requirements, for the purpose of sale or lease as part of a larger common plan of development or sale.

Subsurface Drain. A pervious backfield trench, usually containing stone and perforated pipe, for intercepting groundwater or seepage.

Surface Runoff. Precipitation that flows onto the surfaces of roofs, streets, the ground, etc., and is not absorbed or retained by that surface but collects and runs off.

Swale. An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water. Swales conduct stormwater into primary drainage channels and may provide some groundwater recharge.

Temporary Stabilization. The covering of soil to ensure its resistance to erosion, sliding, or other movement. The term includes vegetative cover, anchored mulch, or other non-erosive material applied at a uniform density of seventy percent (70%) across the disturbed area.

Tile Drain. Pipe made of perforated plastic, burned clay, concrete, or similar material, laid to a designed grade and depth, to collect and carry excess water from the soil.

Topographic Map. Graphical portrayal of the topographic features of a land area, showing both the horizontal distances between the features and their elevations above a given datum.

Topography. The representation of a portion of the earth's surface showing natural and man-made features of a give locality such as rivers, streams, ditches, lakes, roads, buildings and most importantly, variations in ground elevations for the terrain of the area.

Trained individual. An individual who is trained and experienced in the principles of storm water quality, including erosion and sediment control as may be demonstrated by state registration, professional certification, experience, or completion of coursework that enable the individual to make judgments regarding storm water control or treatment and monitoring.

Urban Drain. A drain defined as “Urban Drain” in Indiana Drainage Code.

Urbanization The development, change or improvement of any parcel of land consisting of one or more lots for residential, commercial, industrial, institutional, recreational or public utility purposes.

Water Quality. A term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.

Water Resources. The supply of groundwater and surface water in a given area.

Waterbody. Any accumulation of water, surface, or underground, natural or artificial, excluding water features designed and designated as water pollution control facilities.

Watercourse. Any river, stream, creek, brook, branch, natural or man-made drainageway in or into which stormwater runoff or floodwaters flow either continuously or intermittently.

Watershed. The region drained by or contributing water to a specific point that could be along a stream, lake or other stormwater facilities. Watersheds are often broken down into subareas for the purpose of hydrologic modeling.

Watershed Area. All land and water within the confines of a drainage divide. See also Watershed.

Wetlands. Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

APPENDIX B

MS4 BOUNDARY MAP

MS4 map